

SOUTHEASTERN BIOLOGY

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ASB

ASB 71ST ANNUAL MEETING

APRIL 7-10, 2010

ASB

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Western Carolina University
Cullowhee, North Carolina, and
University of North Carolina
Asheville, North Carolina

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PURPOSE

The purpose of this association shall be to promote the advancement of biology as a science by encouraging research, the imparting of knowledge, the application of knowledge to the solution of biological problems, and the preservation of biological resources. The ASB has representation in Section G Committee of the AAAS. Varying types of membership are available to individuals and institutions. See inside back cover.

TIME AND PLACE OF FUTURE MEETINGS

2010 April 7-10: Co-hosted by Western Carolina University, Cullowhee, North Carolina, and its Southern Appalachian Biodiversity and Ecology Center, and the University of North Carolina, Asheville, North Carolina. Meeting site is the Crowne Plaza Hotel, Asheville, North Carolina.
2011 April 13-16: Hosted by the University of Alabama, Huntsville, Alabama. Meeting site is the Von Braun Convention Center adjacent to the Embassy Suites Hotel, Huntsville, Alabama.
2012 Athens, GA. 2013 West Virginia.

THE VIEW FROM HERE

A MESSAGE FROM THE PRESIDENT PATRICIA B. COX

Once again, I'm sitting on the 11th floor of the TVA tower looking out the window, this time, instead of seeing the Smoky Mountains in the distance, I am watching it snow. In Knoxville, this has been one the coldest Januaries on record and we have gone almost two weeks without breaking the freezing mark. What affects will these record-breaking cold temperatures have on our environment? As a field botanist, ever concerned about tick bites, I've always heard that cold weather will help to control the tick population, as well as fire ants, fleas, mosquitoes, and other bugs. This week I read a newspaper article and according to a University of Georgia entomologist (Dr. Elmer Gray), this is an old wives tale. These organisms become almost completely metabolically inactive. During this time, they live on body sugars, something akin to antifreeze, keeping them alive to bug us again on a warmer day. I'm very disappointed to learn this.



Despite the cold temperatures, preparations for the 71st Annual ASB meeting in Asheville, North Carolina, April 7-10, 2010, are in full swing. By now everyone who is planning to present a paper or poster has submitted his/her abstract. At last count, the Program Committee has received almost 500 abstracts, which could result in one of the biggest and BEST ASB meetings ever. This is so exciting and I appreciate everyone's support of this organization. I would like to especially say THANK YOU to our affiliate societies: American Society of Ichthyologists and Herpetologists-Southeastern Division; Botanical Society of America-Southeastern Division; Ecological Society of America-Southeastern Chapter; Society of Herbarium Curators; Society of Wetland Scientists-South Atlantic Chapter; Southeastern Society of Parasitologist; Southern Appalachian Botanical Society, and Tri-Beta-Southeastern Districts I & II. Without you, there would be no ASB. While I'm thanking folks, ASB is also greatly indebted to its Patron Members: Associated Microscopes Inc.; Tim Atkinson, Breedlove, Dennis and Associates Inc.; Carolina Biological Supply Company; Martin Microscope Company; Brooks/Cole Cengage Learning; and Marilyn Pendley. Thank each of you for your support.

While at ASB, please make every effort to attend the Plenary Session on Wednesday evening, April 7th at 7:30 pm. We are very fortunate to have Dr. David Wagner, one of the foremost Lepidopterists in the country. If you don't have a copy of his book *Caterpillars of Eastern North America: A Guide to Identification and Natural History* (2005), then you are missing a valuable resource. Even a botanist can appreciate the beauty of these amazing

invertebrates. I've known Dave for many years and find his talks to be interesting and fascinating. You won't want to miss this. Also, the Committee on Human Diversity has a special luncheon planned on Thursday from 12:00-1:30. Guest Speaker, Dr. Kelly Ward from the University of Washington has accepted the invitation to discuss her article: "Academic Motherhood: Negotiating Work and Family." Dr. Ward's research is focused on faculty life. Her research on work and family has been supported by the Alfred P. Sloan Foundation and the American Association of University Women Educational Foundation.

I'm also very interested in attending both symposia that have been organized for Asheville 2010. Scheduled for all day on Thursday, April 8th is "Early Successional Habitats and the Sustainability of Age Class Diversity of Eastern Upland Hardwood Forest: What, Why, Where and How," and on Friday afternoon, April 9th will be five presentations centering around the topic: "Conservation in western North Carolina".

One of the biggest threats to our native ecosystems is from Non-Native Invasive Plant species. Within the past two years, three of our southeastern states (Georgia, Mississippi, and Tennessee) have developed Cooperative Weed Management Areas (CWMA). These CWMA's are partnerships of federal, state and local government agencies along with tribes, individual landowners and various other interested groups that manage noxious weeds or invasive plants in a defined area. Georgia, Mississippi and Tennessee have created MOU's with local, state, and federal agencies within each state and the first order of business for each CWMA is to develop strategic plans for Early Detection/Rapid Response (EDRR) for the Federal Noxious weed, cogongrass (*Imperata cylindracea*). If you are unfamiliar with cogongrass, it is one the World's Worst Weeds and was first introduced into the United States as packing material at Grand Bay, Alabama in the early 1900's. Since that time, there have been several secondary introductions into Florida and Southern Mississippi to be used as a foraging crop. Currently, cogongrass can be found in eight Southeastern States with Florida, Alabama, and Mississippi having extensive populations. This plant displaces native vegetation forming large exclusive allelopathic colonies. It is a fire adapted species that burns very hot causing property loss and is a safety hazard. In addition, cogongrass has little to no wildlife value. One of my favorite quotes that sums up this plant perfectly is from Jim Miller, USDA Forest Service, "It does not just alter the Web-of-Life, It Replaces it with a Lime-Green Biological Desert." The main goal of the Tennessee CWMA is to prevent the introduction of cogongrass within the state. To date, there has been one known occurrence, and that population was eradicated. If you would look at a distribution map, you will notice that cogongrass is spreading rapidly northward via our federal and state highway systems; largely due to seeds/rhizomes being spread by mowing equipment. Other methods of dispersal can be through contaminated soil, hay, riprap, and heavy equipment. Education on best management practices (BMP's) along with Early detection/Rapid response will be preventative methods that will be cost effective in the long term. So far, Mississippi and Georgia have spent millions of dollars to control cogongrass within their CWMA. Tennessee hopefully is ahead of the eight ball and will stop cogongrass at our borders.

Last, but definitely not least, there are also a variety of pre- and post-field trip options for attendees and guests. Please take advantage of these great

opportunities to get outside and enjoy the Blue Ridge and Smoky Mountains. Since most of the trips have limited space, please sign up quickly—this could be a chance of a lifetime to get out in the field and learn from expert biologists.

In my opinion, the 71st Annual ASB meeting has the potential to be one of the best and most attended meetings in recent years. I look forward to seeing all of you in Asheville. Come help us make ASB History!

Sincerely,

Patricia B. Cox, President



ASB CANDIDATES FOR OFFICE—2010

The Nominating Committee composed of Thomas R. Wentworth (Chair), Elaine Davis, and Douglas A. Rayner has selected the following slate of nominees for the ASB offices to be filled in 2010. Voting will take place at the annual business meeting which begins at 11:15 a.m. on Friday, April 9, 2010. Additional nominations will be accepted from the floor before voting is conducted. Please plan to attend and vote. Elections can sometimes be close. Therefore, your vote could make a difference on who gets elected to office.

| | | |
|--------------------------------|--------------------------------------|---|
| <i>President-Elect</i> | Donald H. Roush | University of North Alabama Florence, Alabama |
| | Robert Wayne Van Devender | Appalachian State University Boone, North Carolina |
| <i>Vice President</i> | Jennifer Davis | Shorter College Rome, Georgia |
| | Ray S. Williams | Appalachian State University Boone, North Carolina |
| <i>Secretary</i> | Conley K. McMullen | James Madison University Harrisonburg, Virginia |
| | Terry D. Richardson | University of North Alabama Florence, Alabama |
| <i>Executive Committee</i> | James T. Costa | Highlands Biological Station Highlands, North Carolina And Western Carolina University Cullowhee, North Carolina |
| | Christi Magrath | Troy University Troy, Alabama |
| | Ashley B. Morris | University of South Alabama Mobile, Alabama |
| | Alan Weakley | University of North Carolina Chapel Hill, North Carolina |



Dr. Donald H. Roush



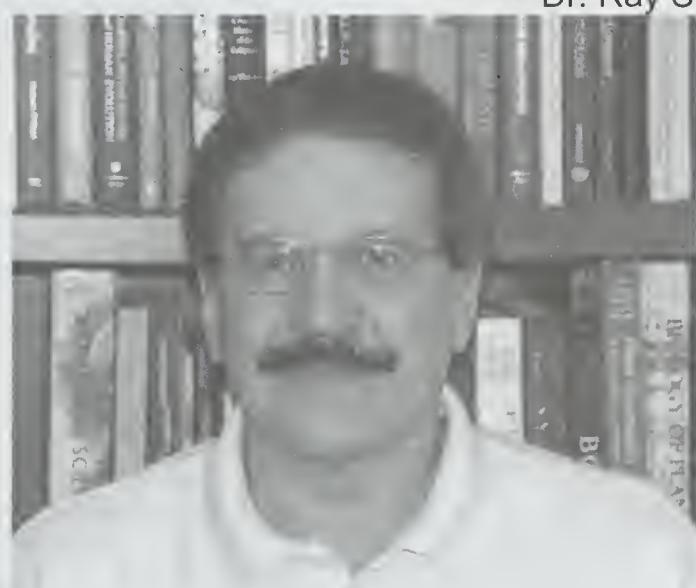
Dr. Robert Wayne Van Devender



Dr. Jennifer Davis



Dr. Ray S. Williams



Dr. Conley K. McMullen



Dr. Terry D. Richardson



Dr. James T. Costa



Dr. Christi Magrath



Dr. Ashley B. Morris



Dr. Alan Weakley

PRESIDENT-ELECT

Donald H. Roush – Dr. Roush is a professor of biology in the Department of Biology at the University of North Alabama in Florence, Alabama. His education began and concluded at the University of Mississippi with the awarding of a BS (70), MS (72), and Ph.D. (81). His experience continued with a short period at St. Jude Research Hospital in Memphis, Tennessee. His areas of interest include general microbiology and immunology. His current research interests are in microbial ecology and antibiotic resistance of organisms from environmental water systems and sewage treatment facilities. He has worked most recently with commercial consulting firms on problems of “sick building” remediation caused by fungal growth and contamination. His teaching includes courses for biology majors and allied health including nursing, physical therapists, pre-medical and pre-dental. He is a member of numerous honor societies, holding regional and national offices and is the current National President of Beta Beta Beta Biological Honor Society. Other professional organizations he is a member of and contributed to include AAUP (campus officer), American Society for Microbiology (ASM), SE Branch ASM, Mississippi Academy of Sciences, and Alabama Academy of Sciences. He has presented papers and posters as well as served as a judge at state, regional and national meetings for all of these organizations and as the delegated ASM judge to several International Science and Engineering Fairs (Westinghouse and Intel competitions). He has been included in Who's Who Among America's Teachers for numerous years. He is a member of ASB and has attended and contributed to every meeting since 1989. He has served as the representative to ASB for the affiliated organization Beta Beta Beta (TriBeta, the biology honor society), which meets jointly with ASB each year. He was a regional director for the southeastern region of TriBeta and responsible for the organization of their scientific program and field trips held jointly with ASB each year. In that capacity he has attended and collaborated with all the local arrangement committees and the Executive Committee of ASB since 1991. He has served ASB as a Member-at-large to the Executive Committee. He also has served on numerous committees including the Resolutions Committee, Publications committee (and the ad hoc committee to study electronic submission of abstracts, the ad hoc committee to study a possible advertisement policy for Southeastern Biology), Place of Meeting Committee, the Education Committee, the Microbiology Award Committee and the Local Arrangement Committee for the 2005 ASB meeting held in Florence, Al. His current work involves isolating and tracing antimicrobial resistance organisms from environment samples using molecular fingerprinting techniques.

Robert Wayne Van Devender – Dr. Van Devender was born an Air Force kid in Roswell, New Mexico in 1947 and developed an interest in lizards before his third birthday. After re-discovering amphibians and reptiles and graduating from high school outside of Dallas, Texas, he completed an undergraduate degree at Yale University in 1965. In the Yale years he developed new interests in salamanders, evolution, and photography and submitted his first scientific paper. From New Haven, he moved to Ann Arbor, Michigan, for much of the next nine years. In those years he came to love the tropics, completed a dissertation on basilisk

demography in Costa Rica, as well as meeting and marrying Amy Sharader. Between finishing the dissertation in 1975 and moving to Appalachian in 1978, he taught at Oklahoma State University, supervised the computerization of the Michigan herp collection, and carried out surveys of endangered amphibians and reptiles in Michigan. After coming to Boone, North Carolina, as a lizard ecologist and discovering that not one species of lizard lives in Boone, he discovered that the beauty, diversity, and sheer abundance of salamanders was worth the relocation to the living Pleistocene here in the southern Blue Ridge. During the 27 years in Boone, he has had a dozen MS students finish projects ranging from radiotelemetry of salamanders to salamander systematics and ecology to mammal population biology to various factors related to amphibian population declines and recoveries. His students and he have attended many scientific meetings and presented many papers during those years. He has maintained an interest in photography over the years and uses images as tools in all his teaching. Using photography as an obvious excuse for searching out new and interesting subjects for the classroom has led him to amass a collection of well over 100,000 slides and a collection of over 25,000 specimens of herps and mammals at ASU. He has served as Member-at-Large on the ASB Executive Committee, and has attended ASB annual meetings regularly. He has also served on host committees for two ASB meetings and two SSAR meetings, has been elected as a Councilor of the Herpetologist's League, has served as both President and Vice-president of the North Carolina Herpetological Society, has been a scientific advisor and representative of Appalachian State University at the Highlands Biological Station for many years, and has been nominated for President of the SSAR. He suspects that his most lasting contributions to our scientific community will be the many photographs of herps and mammals that he has been able to share over the years. He is currently working with two graduate students, with his wife on her survey of the land snails of North Carolina, and with several people on a survey of the amphibians, reptiles and even leeches of Cat Tien National Park in South Vietnam. While he has little interest in getting to his final continent (Antarctica), he certainly wants to spend a great deal more time and effort in all the other continents. So many places and creatures and so little time.

VICE PRESIDENT

Jennifer Davis – Dr. Davis is in her 34th year as a professor of biology at Shorter College in Rome, Georgia. She holds a B.A. in biology from Elmhurst College (1969), a M.S. in biology from Emory University (1971), and a Ph.D. in biology from Mississippi State University (1994). The mission of Shorter College is to provide excellent undergraduate education; so, the emphasis of her professional career at Shorter has been teaching biology. While active biological research interests have been associated with cell biology and genetics, Jenny Davis considers herself to be a 'generalist' in biology because her undergraduate teaching requires a breadth of biological mastery. She has taught, or teaches, general biology, zoology, genetics, cell biology, histology, developmental biology, physical science, science education, bioethics, and a course in biodiversity conservation. She has developed several courses including "Issues in Bioethics" and "Issues in Biodiversity Conservation," a course taught in conjunction with

Shorter's study abroad/travel programs and suitable for non-biology majors. In recent years, she has developed and participated in month-long study abroad trips to Europe (1997, 2001), a month-long trip to Myanmar (Burma) and Thailand in 2003, and a month-long trip to Ecuador, including the Galapagos Islands, in 2007. In addition to teaching biology, in study/travel contexts her professional interests include: science education issues; ethical issues concerning biodiversity conservation, genetics and biotechnology, and health; the history of science -- particularly, the history of women in science; mentoring and encouraging young women and minorities to become scientists; and promoting undergraduate research. She is a member of AAAS and ASB. She has served on the Ethics Committee of Floyd Medical Center in Rome, Georgia, since 2003.

Ray S. Williams - Dr. Williams is an Associate Professor in the Department of Biology at Appalachian State University (ASU), Boone, NC. He received his B.A. in Biology from the University of North Carolina-Greensboro, Greensboro, NC, his M.S. in Biology from Appalachian State University, Boone, NC, and his PhD from the University of South Carolina, Columbia, SC. After completing his doctorate and before joining the faculty at ASU, Dr. Williams served as a Post-doctoral Associate in the Environmental Sciences Division at Oak Ridge National Laboratory, TN. At Appalachian State he teaches Entomology, Plant-Insect Interactions, General Biology for majors and Bibliography and Research for all graduate students. His research interests are the interactions between plants and insects, with a special interest in the mechanism of interactions. He and his students have most recently focused on the effects of climate change factors on plant and insect communities. Other work in Dr. Williams' laboratory has considered the role of habitat fragmentation on the genetics of a butterfly and the effects of fire on above- and below-ground plant-insect interactions. He is co-author on numerous presentations at regional and national meetings and has peer-review publications in national and international journals. Dr. Williams has been a member of ASB for close to 20 years and holds membership in the Ecological and Entomological Societies of America and Sigma Xi. He is past chair of the ASB student poster award committee and has moderated oral sessions for the organization.

SECRETARY

Conley K. McMullen – Dr. McMullen is Associate Professor of Biology at James Madison University in Harrisonburg, Virginia. He received his B.S. in Biology from Eastern Mennonite University, his M.S. in Biology from JMU, and his Ph.D. in Botany from the University of Maryland at College Park. At JMU, he teaches a variety of classes including introductory biology and four upper level plant courses. He is director of the JMU herbarium and serves on the Edith J. Carrier Arboretum Advisory Council. His research interests are focused on the eastern U.S. (floristic studies) and the Galápagos Islands (floristics, systematics, pollination biology). He has spoken widely and authored numerous scientific papers on these topics, including his book *Flowering Plants of the Galápagos*. He serves on the Flora Advisory Board for the Flora of Virginia Project, is a member of the Virginia Flora Committee, and for many years has been a group leader at

the West Virginia Wildflower Pilgrimage. He is a Life Member of the Association of Southeastern Biologists, the Southern Appalachian Botanical Society, and the Virginia Academy of Science. He has served on the Graduate Student Support Award Committee of ASB, has served a variety of positions for SABS (President, Executive Council, Public Interest Committee, Bartholomew Award Committee, Core Student Award Committee, Planning Committee), and has served as both Secretary/Editor and Chair of the Botany Section of VAS. He is also a member of the American Society of Plant Taxonomists, the Botanical Society of America, and the Society of Herbarium Curators (Executive Board, Editor of *The Vasculum*). Additionally, he is an Honorary Research Associate of the Brooklyn Botanic Garden, a member of the Science Advisory Board of Galápagos Conservancy, an elected Fellow of The Linnean Society of London, and an elected Governing Member of the Charles Darwin Foundation for the Galápagos Islands.

Terry D. Richardson – Dr. Richardson is an Associate Professor in the Department of Biology at the University of North Alabama, Florence. He earned a B.S. in Professional Biology from the University of North Alabama, a M.S. in Aquatic Biology from the University of Alabama, and a Ph.D. in Zoology and Physiology from Louisiana State University. In 1990 he received an Oak Ridge Associated Universities Postdoctoral Fellowship, and he accepted his current position at the University of North Alabama in 1991. In 2007, Terry completed residence at the University of Oxford, St. Anne's College, as a member of the Oxford Round Table. Dr. Richardson presently teaches nonmajors biology and upper division courses in Aquatic Ecology and General Ecology. He has also taught summer courses in Marine Behavioral Ecology and Tropical Marine Ecosystems at the Dauphin Island Sea Laboratory, Dauphin Island, Alabama. His research interests include environmental influences on the behavior of marine invertebrates, and population and conservation ecology of freshwater mollusks.

Terry has been an active and devoted member of ASB since 1982 when he joined as an undergraduate. Since that time he has served ASB in the following capacities: three years on, and chaired, both the ASB Student Research Award and Poster Award committees; three years as an Executive Committee Member-at-Large; vice-chair and chair of the Patrons and Exhibitors Committee; Chair of the Local Arrangements Committee for the 66th Annual Meeting in Florence in 2005; six years as Associate Editor of *Southeastern Biology*; and has previously served as Secretary of ASB for six consecutive years. He has served as ASB Membership officer and Chair of the Membership Benefits Committee. Terry has nearly 17 years experience on the ASB Executive Committee. Additionally, Terry is heavily involved in campus and community service having chaired numerous university committees and is a 2nd term incumbent Senator of the UNA Faculty Senate. He is Chair of the University Shared Governance Executive Committee and President-elect of the Faculty Senate. He is finishing a two year term as Chair of the Dauphin Island Laboratory University Programs Committee. He contributes to his community by serving as an officer for community organizations and serving on the board of a non-profit community organization. He is a selected speaker for area nature groups and scuba organizations.

EXECUTIVE COMMITTEE

James T. Costa – Dr. Costa is currently Professor of Biology at Western Carolina University in Cullowhee, NC, where he has been a faculty member since 1996, and has been Executive Director of the Highlands Biological Station in Highlands, NC since 2005. His research focuses largely on the behavioral ecology and evolution of social insects (in particular the relatively unsung social caterpillars, sawflies, beetles and relatives), and, in the realm of history and philosophy of science, on Darwin, the *Origin of Species*, and the history of evolutionary thinking.

He was introduced to insect social behavior and evolutionary biology as an undergraduate working with Terrence Fitzgerald at SUNY Cortland in upstate New York. After earning my BS in 1985, he completed an M.S. in insect community ecology (1988, under Dac Crossley) and a Ph.D. in insect population genetics (1992, under Ken Ross), both at the University of Georgia. He then spent nearly 4 years at Harvard's Museum of Comparative Zoology working with Naomi Pierce before heading back down south to join the faculty at WCU. He remains a Research Associate of the MCZ, and returned to Harvard in 2004-2005 for a sabbatical year as a Fellow at the Radcliffe Institute for Advanced Study to complete his insect social behavior book *The Other Insect Societies* (2006, Harvard University Press). More recently, in 2009, Harvard published his book *The Annotated Origin*, an annotated reader's guide to the *Origin of Species*, which stemmed from his parallel interest in Darwin and evolution. He has been fortunate in being able to pursue teaching interests as varied as his research activities. Over the years he has taught genetics, forensic biology, biogeography, entomology, and a course on the *Origin of Species* both at WCU and in Harvard's annual summer course on Darwin at Oxford University in the UK. He has also co-taught field courses in Hawai'i and the desert Southwest, lectured on Darwin and the *Origin* in the Galápagos Islands, and teach an insect behavior course at Highlands Biological Station.

Since becoming involved with ASB through his role as HBS director, James has been greatly impressed by the rich history of the organization and its long tradition of participation by researchers and especially students from across our region and across the research spectrum, with strong representation from organismal and ecological fields. Rather like the camaraderie and commonality of purpose found at biological field stations, ASB as a scientific organization fosters a unique and collegial environment for the exchange of scientific information and ideas. It would be a distinct honor to work with ASB in furthering this mission.

Christi Magrath – Dr. Magrath is an associate professor of Biological and Environmental Sciences at Troy University, Troy, Alabama where she has been since 1999. With a Ph.D. from the Tulane University in Molecular and Cellular Biology (1999) and a B.S. from the University of Southern Mississippi (1993), her teaching interests are Molecular Biology, Immunology, Bioethics, and Principles of Biology. She is faculty advisor for the Mu Epsilon/Troy University Chapter of Beta Beta Beta (Biological Honor Society) and was recently selected as the District Director for Southeast District II for TriBeta. Major responsibilities of this position include organizing the TriBeta annual Southeast Region Meeting that is

held in conjunction with the ASB annual meeting, representing TriBeta as an affiliate representative for ASB, and making site visits to universities throughout the Southeast. In 2005, students nominated her and she was selected as Southeastern District II TriBeta Faculty Advisor of the Year. In 2007, she was awarded a humanitarian award by Troy University—the Algernon Sydney Sullivan Award for “ideals of heart, mind, and conduct as evince a spirit of love for and helpfulness to other men and women”. As a nine year member of ASB, she served for three years on the ASB Microbiology Awards Committee and was Chair of the Microbiology Awards committee in 2009. She has been invited by AAAS and the NSF to serve on several national panels dedicated to transforming undergraduate biology education. She also is a member of Yeast in the Southeast, the American Society for Microbiology, and the Alabama Academy of Science. Her primary research goal as a faculty member is inclusion of undergraduate students. In the past ten years, more than 25 research presentations have been made at ASB/TriBeta by students from her research laboratory (including three Johnson Awards), focusing primarily on establishing relationships between replication initiation and transcription termination and investigating environmental responsiveness in *Saccharomyces cerevisiae*. Her research program has been funded or supported by the Genome Consortium for Active Teaching, the Alabama Department of Public Health, the TROY Foundation, and an NSF CAREER Grant. She is the excited new mother of 12 and 10 year-olds, Trissy and Malory.

Ashley B. Morris – Dr. Morris is an Assistant Professor in the Department of Biology at the University of South Alabama in Mobile. Ashley received her B.S. (1997) in Natural Resources from the University of the South, commonly known as Sewanee, in Tennessee, where she was first exposed to the wonders of forest ecology and plant taxonomy. She then moved on to the now defunct Department of Botany at the University of Tennessee, Knoxville, where she studied population genetic structure of high-elevation beech gaps in the Smokies. During this time, she presented her first professional talk in 1999 at the ASB meeting in Wilmington, NC. Her M.S. (2001) was under the direction of Dr. Mitch Cruzan (and Drs. R. L. Small and J. Weltzin). Ashley received her Ph.D. from the also now defunct Department of Botany at the University of Florida, Gainesville, under the direction of Drs. Pam and Doug Soltis (and Drs. W.S. Judd, S. Manchester, and R. Kimball). Her dissertation work on the molecular systematics of *Illicium* and phylogeography of eastern North American trees continues to be her research focus at the University of South Alabama, where she has been for the last three years. She currently teaches the core undergraduate course in Genetics, and is developing courses in Molecular Ecology and Economic Botany.

Alan Weakley – Dr. Weakley grew up in Virginia and is a plant systematist, floristician, and community ecologist specializing in the Southeastern United States. He holds a B.A. in Botany and Comparative Literature (University of North Carolina at Chapel Hill, 1978) and a Ph.D. in the Environment (Duke University, 2005). He has had an extensive and varied career in botany, ecology, and conservation, including work as an environmental consultant (CZR, Inc., 1978-1980), botanist, ecologist, and assistant coordinator for the North Carolina

Natural Heritage Program (1984-1994), Senior Regional Ecologist and later Chief Ecologist for The Nature Conservancy and NatureServe (1994-2002). Since 2002, Alan has been Curator of the UNC Herbarium (NCU) of the North Carolina Botanical Garden, and Adjunct Assistant Professor at UNC-Chapel Hill in the Curriculum for the Environment and Ecology and the Department of Biology. He serves on the *Flora of North America*'s Board of Directors, as Trustee of the North Carolina Natural Heritage Trust Fund, Chair of the North Carolina Plant Conservation Program Scientific Committee, Chair of the North Carolina Natural Heritage Program Advisory Committee, and is a co-founder of the Carolina Vegetation Survey. He is a regular reviewer of articles for regional and international journals. His primary research interests include eastern North American floristics, plant systematics, and phytogeography, classification and mapping of vegetation types, bioinformatics, conservation planning theory and practice, conservation biology, and natural lands management and restoration. Alan is working on several flora projects, including a new *Flora of the Southern and Mid-Atlantic States* and the *Flora of Virginia* Project.

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Joyner Plaza near the Moore Building on the campus of Western Carolina University, Cullowhee, North Carolina.

**Western Carolina University
and
University of North Carolina Asheville**

are proud to host the



**71st Annual Meeting of the
Association of Southeastern Biologists
April 7-10, 2010, Asheville, NC
Crowne Plaza Resort**

This four-day event brings together approximately 800 biologists from across the southeastern United States. The meeting features a distinguished plenary speaker, special symposia, field trips, oral and poster presentations, workshops, networking and social events, and more.

The Annual Meeting provides you with the exclusive opportunity to showcase your products and/or services to this large and important audience of faculty, students, researchers, conservation workers, military and government personnel, and business professionals with a common interest in biological issues. Interests are diverse, and range from genetics and molecular biology, to physiology and population biology, to community and ecosystem ecology and systematics.

About ASB: The Association of Southeastern Biologists (ASB) was established in 1937 by biologists concerned with the quality of biological research in the southeastern United States. Today, ASB is the largest regional biology association in the country, and is committed to the advancement of biology as a science by the promotion of science education, research, and the application of scientific knowledge to human problems.

ASB Web Site: Many thanks to Dr. Dennis Haney, Furman University for maintaining ASB's web site. Please visit our new and exciting web site: www.asb.appstate.edu. Many new features have been added, register on-line for our Annual Meeting, view photos, inquire about career opportunities and more.

Western Carolina University, Cullowhee, NC (WCU)

Often called “the Cullowhee experiment,” Western Carolina University was founded in 1889 as a semi-public high school to bring higher education and career opportunities to the western region of North Carolina. In 1967 the institution was designated a regional university by the North Carolina General Assembly, and, in 1972, WCU became a member of the University of North Carolina system. Today, the Department of Biology offers two undergraduate degree options, the Bachelor of Science and the Bachelor of Science in Education, and three graduate degree options: Master of Science, Master of Arts in Teaching, and Master of Arts in Education. The department’s Southern Appalachian Biodiversity and Ecology Center and affiliations with The Helen Patton Environmental Research Center and Highlands Biological Station promote education, research, and outreach focused on the ecology and biotic diversity of the Southern Appalachian Region. An herbarium with more than 25,000 specimens; biotechnology laboratories; affiliations with other WCU programs, including Forensic Science, Environmental Science, and Natural Resource Conservation and Management; and cooperative education and internships provide opportunities for focused or wide-ranging study in Biology.

Adjacent to the Great Smoky Mountains, WCU has a commitment to the rich traditions of the Appalachian and Cherokee cultures. Its Mountain Heritage Center, Cherokee Center, and Craft Revival Project reflect this influence. The university’s mission is focused on quality education and preparation for responsible citizenship in a changing world. WCU now provides an education to students from 38 states and 32 countries. Academic programs include the nation’s highest-ranked entrepreneurship and project management programs, a national award-winning teacher education program, a criminal justice program used as a model for North Carolina’s accreditation program, and the nation’s first accredited four-year emergency medical care program. In 2005, the Millenial Initiative doubled the size of the campus and established an enterprise zone for educational opportunities and economic development. This year, the U.S. News & World Report guide to “America’s Best Colleges” ranked WCU among the top 10 public universities in the South that offer master’s degrees, and the Corporation for National and Community Service named Western Carolina to the President’s Higher Education Community Service Honor Roll with Distinction for “exemplary commitment to service and civic engagement.” To top off the list of honors, the Pride of the Mountains Marching Band was named recipient of the Sudler Trophy, the ‘Heisman Trophy’ of university marching bands. “The Cullowhee experiment” has grown to become a major cultural, scientific, and educational force in the region and the state—and we’re still growing.

University of North Carolina Asheville, Asheville, NC (UNCA)

Welcome to the University of North Carolina at Asheville, and to the kind of education that changes lives and inspires others to do the same. As the only designated liberal arts institution in the 16-campus University of North Carolina system, we serve students who are prepared for academic challenges by offering an intellectually rigorous education that builds critical thinking and workforce skills. Students with a broad range of interests can select from 30 majors at UNC

Asheville, where they'll get a private school education at a public school price. Our students develop a strong sense of social responsibility through service learning and volunteer activities. They take part in learning far beyond the traditional classroom with internships, study abroad and diverse cultural opportunities. UNC Asheville gets high marks for educational innovation from *U.S. News & World Report* and is ranked among the best liberal arts colleges nationally. Located in a vibrant community, the culturally rich city of Asheville in the Blue Ridge Mountains, UNC Asheville has more than 3,400 students, and 341 full- and part-time faculty. The university is committed to serving the people of North Carolina and to building strong partnerships with our community that will enrich the quality of life of our region.

The Biology Department has 12 full and part-time faculty members and over 100 majors seeking degrees with concentrations in Biological Education, Cellular and Molecular Biology and Ecology and Evolutionary Biology. The Department is housed in the new Zeis Science and Multimedia Building. With state of the art laboratories and an ideal outdoor classroom with the surrounding Blue Ridge Mountains, students and Faculty are actively involved in research with undergraduate students in fields ranging from the cellular to ecosystem level.

Asheville, North Carolina

It's so easy to get stuck in a rut. We're all so busy, there are two things we need and cherish that are hard to squeeze into our hectic schedules: a healthy lifestyle and a vacation. Now you can multitask with an active getaway to Asheville, offering numerous ways to get active while having a unique vacation and educational experience at the Annual ASB Meeting.

In Asheville, being active and healthy isn't a dreaded chore but is an indulgent pleasure. Instead of walking a treadmill like a hamster in a wheel, hike in the mountains or stroll around Asheville's funky downtown. Instead of bland diet frozen dinners, eat gourmet organic and vegetarian cuisine that tastes downright divine. Asheville is the place where being active is just an easy and natural part of the memorable vacation experience.

Asheville is that type of unique, special place that lingers sweetly in your mind and memories for years to come. The city's rich architectural legacy with its mix of Art Deco, Beaux Arts and Neoclassical styles is the perfect retro-urban backdrop to the edgy energy that emanates from the locally owned-shops and art galleries, distinctive restaurants and exciting entertainment venues. Known as an art colony, a healing resort and a home to notable luminaries, statesmen and bohemians, Asheville is one of the most welcoming, vibrant cities in America.

A bastion of cutting-edge art and technology in the Blue Ridge, the city also prides itself on its fascinating Appalachian past and celebrates this culture with annual events. While many cities underwent major overhauls in past decades, Asheville's historic and architecturally diverse downtown remains beautifully preserved.

You will have an unforgettable experience in Asheville at the Annual ASB Meeting April 7-10, 2010. Don't miss it!

ASB-2010 Tentative Schedule

| DAY/TIME | EVENT |
|---------------------------|---|
| Wednesday, April 7 | |
| 8:00 am-8:00 pm | Registration Open |
| 8:00 am-8:00 pm | Cyber Café Open |
| 9:00 am-4:00 pm | Exhibitor Move-In |
| 12 noon-2 pm | Exhibitor Pizza Party (Exhibitors Only) |
| 1:00-7:30 | Field Trips |
| 1:30-5:30 pm | ASB Executive Committee Meeting |
| 1:30-5:30 pm | SABS Council Meeting |
| 2:00-5:00 pm | SSP Executive Committee Meeting |
| 5:30-7:30 pm | SSP Presidential Symposium |
| 7:30-9:00 pm | ASB Plenary Session: Dr. David Wagner, University of Connecticut, 'The Spring Caterpillar Fauna of the Appalachians with Ecological, Behavioral, and Evolutionary Vignettes of Southeastern Species.' |
| 9:00-10:30 pm | Welcome Reception |
| Thursday, April 8 | |
| 7:00 am-5:00 pm | Power Point Preview & Technology Check |
| 7:00-8:30 am | ASB Past Presidents' Breakfast |
| 8:00 am-5:00 pm | Exhibits Open |
| 8:00 am-5:00 pm | Registration Open |
| 8:00-9:00 am | ASB Posters I: Setup |
| 8:10-12:10 pm | Symposium: "Early Successional Habitats and the Sustainability of Age Class Diversity of Eastern Upland Hardwood Forest: What, Why, Where, and How?" |
| 8:15-10:00 am | Paper Presentations |
| 9:00 am-4:00 pm | ASB Posters I: On Exhibit |
| 10:00-11:00 am | ASB Posters I: Presenters (odd numbered posters) must be present |
| 10:00-10:30 am | Break: Visit Exhibits & Posters |
| 10:30-12:00 pm | Paper Presentations |
| 12:00-1:30 pm | Lunch (Individuals & Organizations) |
| 12:00-1:30 pm | Human Diversity Luncheon and Workshop |
| 12:00-1:30 pm | SWS South Atlantic Chapter Luncheon |
| 1:30-3:00 pm | Paper Presentations |
| 1:30-5:00 pm | Symposium: "Early Successional Habitats and the Sustainability of Age Class Diversity of Eastern Upland Hardwood Forest: What, Why, Where, and How?" |
| 2:30-3:30 pm | ASB Posters I: Presenters (even numbered posters) must be present |
| 3:00-3:30 pm | Break: Visit Exhibits & Posters |
| 3:30-5:15 pm | Paper Presentations |
| 4:00-5:00 pm | ASB Posters I: Poster Removal |
| 6:00-11:00 pm | Thursday Night Social |

Friday, April 9

| | |
|-------------------|--|
| 7:00 am-4:00 pm | Power Point Preview and Technology Check |
| 7:00-8:30 am | SABS/BSA Breakfast |
| 7:30-8:30 am | ASB Patrons and Exhibitors Breakfast |
| 7:30-8:45 am | βββ Poster Setup |
| 8:00-9:00 am | ASB Posters II: Setup |
| 8:00 am-2:00 pm | Exhibits Open |
| 8:15-10:00 am | Paper Presentations |
| 8:30-9:00 am | βββ Officers Meeting |
| 9:00-10:00 am | βββ Judges Meeting |
| 9:00 am-4:00 pm | ASB Posters II: On Exhibit |
| 9:00-10:00 am | SHC Executive Board Meeting |
| 10:00-11:00 am | βββ Business Meeting |
| 10:00 am-12:00 pm | βββ Poster Presentations |
| 10:00-11:00 am | ASB Posters II: Presenters (odd numbered posters) must be present |
| 10:00-10:30 am | Break: Visit Exhibits & Posters |
| 10:30-11:15 am | Paper Presentations |
| 11:15 am-12:15 pm | ASB Business Meeting |
| 12:15-1:45 pm | Lunch (Individuals & Organizations) |
| 12:15-1:45 pm | ESA/SE Luncheon |
| 12:15-1:45 pm | Education Committee Luncheon and Workshop |
| 2:00-4:00 pm | Exhibitor Move-Out |
| 1:45-4:45 pm | Symposium: "Conservation in Western North Carolina" |
| 2:30-3:30 pm | ASB Posters II: Presenters (even numbered posters) must be present |
| 3:00-3:30 pm | Break: Visit Exhibits & Posters |
| 3:30-4:00 pm | ASB Posters II: Poster Removal |
| 5:00-6:00 pm | SHC Business Meeting |
| 6:00-7:00 pm | Friday Night Social |
| 7:00-10:00 pm | Awards' Banquet: Presentation and Announcement of Awards |

Saturday, April 10

| | |
|------------------|---|
| 7:30-11:30 am | ASB Executive Committee Breakfast Meeting |
| 9:00 am- 1:00 pm | Field Trips |

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PROGRAM, PAPERS & ABSTRACTS

You must attend and present your paper/poster to be published in the July issue of SEB. Please visit the ASB web site for the latest listing of papers and posters for the Asheville meeting! www.asb.appstate.edu.

PLENARY SPEAKER

DR. DAVID L. WAGNER

Department of Ecology and Evolutionary Biology, University of Connecticut

The Spring Caterpillar Fauna of the Appalachians with Ecological, Behavioral, and Evolutionary Vignettes of Southeastern Species

The Plenary Speaker for the 2010 annual meeting of the Association of Southeastern Biologists in Asheville, NC is Dr. David L. Wagner, Professor in the Department of Ecology and Evolutionary Biology at the University of Connecticut's main campus in Storrs. With a B.S. degree from Colorado State University and Ph.D. from the University of California, Berkeley, Dr. Wagner's areas of research focus on the biosystematics of lepidopterans and conservation of invertebrates. He is the author or coauthor of several books, scores of refereed journal articles, and four on-line insect identification guides. His most recently submitted book, *Rare, Declining, and Poorly Known Butterflies and Moths (Lepidoptera) of Forests and Woodlands in the Eastern United States*, is scheduled for printing in 2010, and he is nearing completion on a caterpillar guide to over 750 species of eastern owlets (Noctuidae). His book *Caterpillars of Eastern North America: A Guide to Identification and Natural History* (2005, Princeton University Press) is in its fifth printing. Recent awards for his work include the National Outdoor Book Award for Best Nature Guidebook and UConn's David Blick Science Education Award. Most of Dr. Wagner's work has been conducted in the woodlands of eastern North America, but he spent nearly a decade studying the moths of La Selva Biological Station in northeastern Costa Rica. More recently, he has started projects in Ecuador.

Outside the sphere of the Lepidoptera, Dr. Wagner chairs Connecticut's Advisory Committee on Endangered Invertebrates and is serving on boards for The Connecticut Chapter of the Nature Conservancy, Connecticut State Museum of Natural History and Organization of Tropical States, and is Co-Director of the University of Connecticut's Center for Conservation and Biodiversity. He was very active in the All Taxa Biodiversity Inventory in Great Smoky Mountains National Park and served on the Discover Life Board for many years.

We welcome Dr. Wagner to the 71st Annual Meeting of the Association of Southeastern Biologists.



Dr. David L. Wagner

ASB POSTER AND PAPER SESSIONS

Please Note: SSP and BBB presentations are being scheduled separately and are not included below. Questions about oral or poster presentations should be directed to Beverly Collins (collinsb@email.wcu.edu).

ASB Tentative Sessions Schedule

Wednesday Evening, April 7

5:30-7:30 pm **SSP Presidential Symposium**

7:30-9:00 pm **ASB Plenary Session:** Dr. David Wagner, University of Connecticut, 'The Spring Caterpillar Fauna of the Appalachians with Ecological, Behavioral, and Evolutionary Vignettes of Southeastern Species.'

Thursday Morning, April 8

9:00-4:00 pm **ASB Posters I (numbers P1.1-P1.105)**

P1.1 ELLEN WINANT AND WILLIAM ENSIGN. Kennesaw State University. Density and population structure of *Elimia* spp. snails in streams with differing geology.

P1.2 MICHAEL DAMRON, KYLE STOWE, WADE HOLCOMB, LINDSAY BROTHERTON, AND THOMAS NELSON. North Georgia College and State University. Influence of local land-use on stream fish communities in north Georgia.

P1.3 JAMES REECE AND WILLIAM ENSIGN. Kennesaw State University. Fish species richness and urbanization in North Georgia streams.

P1.4 ELSPETH SAWYER, CAYLA BEST, AND ALAN F. SMITH. Department of Biology, Mercer University. Preliminary characterization of the phenomenon of invertebrate drift in a Middle Georgia stream.

P1.5 JESSICA KIDDER, ISABEL MOORE, CARLY BYERS, COLLEEN BROOKE, ABBIE M. TOMBA, AND CHARLES WHIPKEY. University of Mary Washington. The effects of acid mine drainage on water quality and macroinvertebrate diversity and abundance in Contrary Creek, Louisa Co, Virginia.

P1.6 LISA BONNER, PATRICK MYER, AND REBECCA HAILEY. Peace College. Effect of periodic flooding and drought on macroinvertebrate community structure in lotic ecosystems.

P1.7 CASEY LOVELADY. Piedmont College. The Influence of Aqueous Phosphate and Nitrogen Solutions on the Survivability of *Hyalella azteca*.

P1.8 ASHLEY WRIGHT AND MAYNARD SCHAUS. Virginia Wesleyan College. Effects of Diet on Gut Morphology of Gizzard Shad.

P1.9 PRIYA BHAVAN, DHARTI PATEL, MARK MEADE, JOSH TURNER, and RICHARD WATKINS. Jacksonville State University. The use of microsatellite markers to examine genetic diversity in the Alabama Holiday darter, *Etheostoma brevirostrum*.

P1.10 EMILY TRIPP, JORDAN LYERLY, MIN-KEN LIAO, AND GREG LEWIS. Furman University. The impact of urbanization on bacterial community compositions in watersheds of Upstate South Carolina.

P1.11 AMANDA SMITH, TOMMY JACKSON, GEORGE MCMULLAN, RYAN OREAR, AND NANCY EUFEMIA DALMAN. North Georgia College and State University, Dahlonega, GA. A comparison of *Escherichia coli* levels in the Chattahoochee River between drought and non-drought years.

P1.12 JORDAN LYERLY, EMILY TRIPP, and MIN-KEN LIAO. Furman University. Using *Bacteroides* DNA to track the source of fecal contamination in waters: proving a method.

P1.13 RYAN OREAR, AMANDA C. SMITH, NANCY EUFEMIA DALMAN, NORTH GEORGIA COLLEGE AND STATE UNIVERSITY. The persistence of riverbed sediment bacteria stores and the disruption by human recreation.

P1.14 RENEE D. GODARD, C. MORGAN WILSON, AND DENAE N. LOBATO. Hollins University. Eastern Bluebirds (*Sialia sialis*) avoid nest boxes with predator guards.

P1.15 EDWARD MILLS. Wingate University. The effects of sound masking on the crow call of Blue-breasted Quail (*Coturnix chinensis*).

P1.16 ALEXANDER KOHORST, CHRISTOPHER HILL. Coastal Carolina University. Post-fledging survival and colony attendance of Least Terns (*Sternula antillarum*): a comparison of rooftop and natural colony sites.

P1.17 ALEXANDRA BENTZ AND LYNN SIEFFERMAN. Appalachian State University. Influence of social stress and female quality on offspring fitness in Tree Swallows, *Tachycineta bicolor*.

P1.18 JUSTIN MARTIN AND KIM MARIE TOLSON. Department of Biology, College of Arts and Sciences, University of Louisiana at Monroe. Wood duck nest box management based on nest success data and geospatial analysis.

P1.19 LEAH M. GOOD AND H. DAWN WILKINS. University of Tennessee at Martin. Species diversity of woodpeckers in a water tupelo swamp and a bottomland hardwood forest in northwest Tennessee.

P1.20 MATT PARDUE AND KIM MARIE TOLSON. Department of Biology. Nest-site selection of dickcissels (*Spiza Americana*) across four locations in northeast Louisiana.

P1.21 KALIA MILLER AND RENEÉ E. CARLETON. Berry College. Fecal mass of nestling eastern bluebirds (*Sialia sialis*) reared in wooden nest boxes decreases in response to increasing nest box temperature.

P1.22 KELLY GRONEMEYER¹, RALPH SAPORITO², AND MEGAN GIBBONS¹. Birmingham-Southern College¹, Old Dominion University². Avian attack rates on models of juvenile and adult sizes of aposematic and palatable frogs.

P1.23 STEVEN WILKENING, LAINY DAY AND JOHN BALL. The University of Mississippi. Avian cerebellum specialization in relation to acrobatic courtship displays in manakins (Pipridae).

P1.24 KATE LYN SHEEHAN^{1,2}. Clemson University¹, South Carolina Cooperative Fish and Wildlife Unit². Intestinal parasites of the double-crested cormorant (*Phalacrocorax auritus*), in northern Alabama.

P1.25 RACHAEL HOCH¹, MICHAEL A. GANGLOFF¹, BYRON HAMSTEAD¹, AMY SILVANO², and JAMES B. GRAND². Appalachian State University¹, Alabama Cooperative Fish and Wildlife Research Unit². Update on Crayfish Sampling with the Alabama Inventory and Conservation Planning Project in 2008 and 2009.

P1.26 ROBERT L. HOPKINS II. University of Rio Grande. A multi-scale approach for selection and management of freshwater protection areas for fish and mussel conservation.

P1.27 SABRINA SHRADER AND NANCY BUSCHHAUS. University of Tennessee at Martin. The effects of direct ultraviolet radiation on early development of the green sea urchin, *Strongylocentrotus droebachiensis*.

P1.28 TERRY RICHARDSON^{1,2}, JEFF SELBY², AND MIKE HOWELL³. University of North Alabama¹, AST Environmental Group², Samford University³. Habitat Enhancement and Conservation of the Watercress Darter, *Etheostoma nuchale*.

P1.29 RYAN HUISH¹, TEVITA FAKA'OSI², HEIMULI LIKIAFU², MARIKA TUIWAWA³, JOSEVA MATEBOTO⁴, LEX THOMSON⁵, DAMON LITTLE⁶. Hollins University¹, Tongan Ministry of Forests², University of the South Pacific³, Fiji Department of Forestry⁴, Secretariat of the Pacific Community⁵, New York Botanical Garden⁶. The sustainable management and conservation of *Santalum yasi* (Sandalwood) in Fiji and Tonga: A combined ecological and genetic approach.

P1.30 BYRON HAMSTEAD, KEVIN WHITE, AND MICHAEL GANGLOFF, Appalachian State University. Effects of Riparian Landuse on Stream Habitats and Macroinvertebrate Communities in the South Fork of the New River, Ashe and Watauga Counties, North Carolina.

P1.31 EMILY BODGOOD. University of North Carolina at Chapel Hill. of North Carolina. Conserving "A Million": Using GIS to analyze the past 10 years of conservation in North Carolina.

P1.32 KATHRYN STEPHENSON CRAVEN. Armstrong Atlantic State University. Nest Failure in Leatherback Sea Turtles (*Dermochelys coriacea*) on the Georgia Coast.

P1.33 TIFFANY KOSCH AND KYLE SUMMERS. East Carolina University. Distribution of the Amphibian Fungal Disease Chytridiomycosis in Peruvian Amphibians.

P1.34 E. NATASHA VANDERHOFF¹, ANNE-MARIE HODGE², BRIAN S. ARBOGAST², JOSEPH R. BURGER³ JEFFERY D. CAMPER⁴ AND TRAVIS W. KNOWLES⁴. Jacksonville University¹, University of North Carolina, Wilmington², University of New Mexico³, Francis Marion University⁴. The margay (*Leopardus wiedii*) as a flagship species for conservation in the foothills of the Andes.

P1.35 JONATHAN STORM¹ AND JUSTIN BOYLES². University of South Carolina Upstate¹, University of Pretoria². Effect of White-Nose

Syndrome on Body Temperature and Mass Loss of Hibernating Little Brown Bats (*Myotis lucifugus*).
P1.36 GERRY PRESLEY AND ANDREW METHVEN. Eastern Illinois University. Production of Edible Mushrooms from Wetcake.
P1.37 SCOTT PEYTON, SUSAN MURRAY. Mississippi Department of Wildlife, Fisheries, and Parks, Mississippi Museum of Natural Science. Current Activities and Available Biological Resources at the Mississippi Museum of Natural Science.
P1.38 MAE KILE, JOEY SHAW, EMILY BLYVEIS AND JENNIFER BOYD. University of Tennessee at Chattanooga. *Scutellaria montana* (Lamiaceae) 2009 monitoring at the Volunteer Training Site, Tennessee Army National Guard, Catoosa Co., Georgia.
P1.39 JAMIE ADAMS, LINDSAY BROTHERTON, PAUL SMITH, AND THOMAS NELSON. North Georgia College and State University. Movements of southern flying squirrels (*Glaucomys volans*) in a fragmented forest.
P1.40 TRAVIS PERRY AND MICHAEL JIANG. Furman University. A GIS analysis of habitat selection by puma (*Puma concolor*) in southcentral New Mexico.
P1.41 ROBERT ATKINSON¹, HERMAN HUDSON¹, AND JAMES PERRY². Center for Wetland Conservation at Christopher Newport University¹, Virginia Institute of Marine Science². Tree survival and growth in created wetland mitigation sites in Virginia.
P1.42 MICHELE BROWER¹, BRYAN COLVARD², YOSUKI SAKAMACHI¹ AND SHEA TUBERTY¹. Appalachian State University¹, North Carolina Soil and Water Conservation District Office (Wilkes County)². An Exploration of Chicken Litter-Induced Trace Metal Phytotoxicity in Plants.
P1.43 JACQUELINE D. ROQUEMORE AND ROBERT B. ATKINSON. Christopher Newport University. Use of a Nontidal Wetland Floristic Database in Wetland Mitigation Assessment.
P1.44 JILL ELLEN BOURDON. Western Carolina University. Location and simulated harvest/disturbance effects on the medicinal herb *Chamaelirium luteum* L.
P1.45 FLORENCE ANORUO¹ AND DAVID LINCOLN². Claflin University¹, University of South Carolina². Nitrogen Availability and the Rate of Nitrogen Fixation by *Frankia*.
P1.46 JENNA HAMLIN AND JENNIFER RHODE WARD. University of North Carolina Asheville. Population and Genotype-Level Effects on Light Responses in an Invasive Liana.
P1.47 KRISTINA CONNOR. U.S. Forest Service, Southern Research Station. Germination and field survival of *Sarracenia leucophylla* seeds.
P1.48 SAMANTHA M. IMFELD¹, DERRICK J. HEYDINGER¹, CHLOÉ E. HART¹, MATTHEW H. COLLIER¹, KEVIN M. GRIBBINS¹, JAY A. YODER¹, AND LAWRENCE W. ZETTLER². Wittenberg University¹, Illinois College². Water relations of terrestrial and epiphytic orchid seeds of North America with special reference to species endemic to Hawaii and an only known truly aquatic.

P1.49 SHERRIE EMERINE¹, AMANDA WEST², and ROBERT RICHARDSON³. North Carolina State University. Porcelain berry (*Ampelopsis brevipedunculata*) and bushkiller (*Cayratia japonica*): two invasive Vitaceae in North Carolina.

P1.50 JULIE CLIFFORD AND JENNIFER RHODE WARD. University of North Carolina at Asheville. Variation in Distyly among Individuals and Populations in the *Piriqueta cistoides caroliniana* Complex.

P1.51 MIJITABA HAMISSOU. Jacksonville State University. Selected Physiological and Morphological Responses of *Arabidopsis thaliana* and *Sorghum bicolor* (L.) Moench to Elevated Salt Concentrations in the Growing Medium.

P1.52 DAVID PONDER AND SAFAA ALHAMDANI. Jacksonville State University. Comparison of Antioxidant Concentrations between Kudzu and Selected Common FoodSources.

P1.53 YING CHEN¹ AND MARJORIE M. HOLLAND². University of Mississippi. The Effects on Soil and Native Coastal Vegetation of Storm Surges and Waves: A Preliminary Investigation.

P1.54 ANDREW S. METHVEN¹ AND ANDREW N. MILLER². Eastern Illinois University¹, Illinois Natural History Survey². Evolutionary relationships of the mushroom genus *Clavariadelphus*: one genus or two?

P1.55 ALEXANDER KRINGS¹, JOSEPH C. NEAL¹, CAROLINE S. BERNARD¹, AND JEFFREY F. DERR². North Carolina State University¹, Virginia Tech². Weed IT: Weeds of Container Nurseries in the United States.

P1.56 MARCELA MORA AND JOHN L. CLARK. University of Alabama. Phylogenetic Examination of the Neotropical Genus *Paradrymonia* (Gesneriaceae) based on Nuclear and Chloroplast DNA Sequences.

P1.57 ELOISE CARTER, STEVE BAKER, THEODOSIA WADE, AND ANYIE LI. Oxford College of Emory University. The Live Oak Initiative: Extending Teacher-Scientist Partnerships Regionally and Virtually.

P1.58 CHRISTOPHER J. PARADISE, LAURIE J. HEYER AND A. MALCOLM CAMPBELL. Davidson College. Integrated systems biology.

P1.59 SARAH NEY, KELLI M. SLUNT, AND ABBIE M. TOMBA. University of Mary Washington. Analysis of Alarm Chemicals in the Freshwater Crayfish *Oncorhynchus rusticus*.

P1.60 MATTHEW ABBOTT, BRANDON FULTZ, JON WILSON, JODY NICHOLSON, ADAM THOMAS, AMANDA KOT, MALLORY BURROWS, BENTON SCHAFER, AND DAVID BENSON. Marian University. Beaver-dredged canal function and development.

P1.61 LAINY DAY¹, STEVEN WILKENING¹, JED BRENSINGER¹, BARNEY SCHLINGER². University of Mississippi¹, University of California Los Angeles². Estradiol plays a role in activating the courtship display of Golden- Collared Manakins (*Manacus vitellinus*).

P1.62 SCOTTIE JACKSON AND ELIZABETH G. DOBBINS, Samford University. Effects of Limestone Quarry Runoff on Stream Ecology and Prevalence of Invasive clam *Corbicula fluminea*.

P1.63 WHITNEY RUPPEL, JOHN J. HUTCHENS, JR., AND VLADISLAV GULIS. Coastal Carolina University. Relationship between macroinvertebrate assemblage structure and ecosystem function in two Coastal Plain blackwater streams.

P1.64 JOHN KRONENBERGER, THOMAS BALDVINS, MARTIN CIPOLLINI, AND ANDY MONTGOMERY. Berry College. Early effects of restoration practices within a historically fire-suppressed mountain longleaf pine ecosystem on vegetative structure and the bird community.

P1.65 HENRY BAREFIELD, JASON A. RYNDOCK, AND MARJORIE M. HOLLAND. University of Mississippi. Survey of the role of spiders in forest restoration practices.

P1.66 WILLIAM DONALDSON AND RON DAVIS. Western Carolina University. The Effects of Roads and Traffic Intensity on Movement Patterns of the Eastern Box Turtle (*Terrapene carolina carolina*) in Western North Carolina.

P1.67 AMANDA ECKER, C. SMOOT MAJOR and KELLY MAJOR. University of South Alabama. Influences of historical land use and environmental variation on plant community structure and biological invasion in Weeks Bay, AL.

P1.68 NICOLE PARRISH AND BEVERLY COLLINS. Western Carolina University. Habitat connectivity analysis of a disjunct population of the Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*) utilizing vegetation surveys, GIS-based landscape analysis, and denaturing gradient gel electrophoresis techniques.

P1.69 SARAH E. STUEBER, JASON W. BOSLEY, CHLOÉ E. HART, MATTHEW H. COLLIER, KEVIN M. GRIBBINS AND JAY A. YODER. Wittenberg University. Differences in habitat preference and suitability based on water balance profiles of *Uca minax*, *U. pugillator*, and *U. pugnax*.

P1.70 JON DAVENPORT AND DAVID CHALCRAFT. East Carolina University. Different kinds of habitat complexity alter predator-prey interactions in different ways.

P1.71 BEN DELANCEY¹, TRAVIS PERRY², THERESA THOM³, AND DAVID SHELLEY⁴. Furman University¹, Congaree National Park². Assessment of *Sus scrofa* disturbance on herpetofauna in Congaree National Park, South Carolina.

P1.72 EMILY PRICE AND RAY WILLIAMS. Appalachian State University. Effects of simulated climate change on the abundance of an exotic weevil, *Cyrtepistomus castaneus*.

P1.73 CHLOÉ E. HART, MATTHEW H. COLLIER AND JAY A. YODER. Wittenberg University. Release of neryl formate prevents detection of red velvet mites by ants when feeding on aphid/scale prey in honeydew-laden habitats.

P1.74 ALEXANDRA E. SACK, ANNA E. BIANCHI, AND PETER A. VAN ZANDT. Birmingham-Southern College. Males Altogether and

Females Alone: Relative Costs and Benefits of Shelter-Sharing in Tropical Caterpillars (*Desmia* sp.) Depend on Sex.
P1.75 JOHN LUDLAM¹, DANIEL MAGOULICK^{2,3}, AND BRANDON BANKS³. Francis Marion University¹, USGS Arkansas Cooperative Fish and Wildlife Research Unit², University of Arkansas³. Variations in the strength of omnivory alter trophic dynamics in an aquatic food web.

EVAN DAVIDSON, ANDREW ELLIOTT, AND R. MALIA FINCHER. Samford University. Impacts of acorn weevils on five oak species in Oak Mountain State Park, AL.

BAL K. NEPAL AND GARY L. WALKER. Appalachian State University. Characterization of the vegetation community associated with *Juniperus virginiana* L. stands in the talus area of cliff systems in the Obed Wild and Scenic River Gorge, Tennessee.

NICHOLAS LEVELSMIER¹, PAULA C. JACKSON¹, THOMAS MCELROY¹, CASANDRA REYES-GARCIA², JOSE LUIS ANDRADE², JUAN MANUEL DUPUY². Kennesaw State University¹, Centro De Investigación Científica De Yucatán². Exploring Tree Species Diversity in the Yucatan Peninsula of Mexico.

HAYDEN SELF, JOSHUA W. CAMPBELL, AND MATTHEW WATERS. Shorter College. Paleoecology of Okefenokee Swamp Based on Diatoms from Short Cores.

VIRGINIA CROSBIE, ALLYSON SCHMIDT, and CHARLES GUNNELS. Florida Gulf Coast University. The effects of bidirectional parental care on the endobiotic community in the paper wasp, *Mischocyttarus mexicanus*.

MORGAN MARSH AND VLADISLAV GULIS. Coastal Carolina University. The role of microorganisms in the decomposition of *Spartina* wrack in coastal ecosystems.

JAMIE CRIST, H. DAWN WILKINS, AND LINDA K. HUSMANN. University of Tennessee at Martin. Characterization of cellulolytic bacteria from the digestive tract of a Yellow-bellied Sapsucker (*Sphyrapicus varius*) and the guts of eastern subterranean termites (*Reticulitermes flavipes*).

MARY JANE CARMICHAEL, SARAH CARMICHAEL, LEIGH ANNE ROBLE, AND SUZANNA BRÄUER. Appalachian State University. Geomicrobiology of Mn Oxide Deposits in Eastern Tennessee Caves.

JESSICA PARKER, STEPHEN CURRAN, AND ROBIN OVERSTREET. The University of Southern Mississippi. Comparison of endohelminth parasite assemblages of the redear sunfish, *Lepomis microlophus*, from freshwater habitats and tidal creeks in southern Mississippi.

ALISON CAREY AND MATTHEW KLUKOWSKI. Middle Tennessee State University. Home Ranges of the Eastern Fence Lizard (*Sceloporus undulatus*).

LYNEA R. WITCZAK, LAUREN E. SEAY, STEVEN J. PRICE AND MICHAEL E. DORCAS. Davidson College. The effects of

urbanization on reproductive success and juvenile survivorship in semi-aquatic turtles.

P1.87 MARIE COLSON^{1,2} AND THOMAS P. WILSON¹. University of Tennessee at Chattanooga¹, Tennessee Valley Authority². Landscape Patterns and Patch Dynamics in Hamilton County, Tennessee, Over a Forty Year Period: Applicability to the Conservation of the Eastern Box Turtle (*Terrapene carolina*).

P1.88 KEVIN MESSENGER¹ and JAYME WALDRON². Marshall University¹, University of South Carolina². Growth and age at reproductive maturity of the Carolina pigmy rattlesnake, *Sistrurus m. miliaris* (Reptilia: Serpentes).

P1.89 TIFFANY BURGESS, MICHELLE CALVO, ULI UMBEHR AND KATHRYN STEPHENSON CRAVEN. Armstrong Atlantic State University. The Effect of Temperature on the Growth of Hatchling Carolina Diamondback Terrapins (*Malaclemys terrapin centrata*) Raised in Captivity.

P1.90 JERROD SHIPMAN¹ and EILEEN UNDERWOOD². Middle Tennessee State University¹, Bowling Green State University². Incubation temperature affects offspring sex in *Rhacodactylus ciliatus*.

P1.91 JEFFREY D. CAMPER. Francis Marion University. Spatial ecology of the Common Kingsnake (*Lampropeltis getula*) in the South Carolina Coastal Plain.

P1.92 NATHAN SHEPARD¹, JAYME WALDRON², CATHERINE JOHNSON³, AND THOMAS PAULEY¹. Marshall University¹, University of South Carolina², United States Forestry Service - Monongahela National Forest³. The Edge Effects of Gated Roads and Trails on the Survivorship of *Plethodon nettingi*.

P1.93 THOMAS P. WILSON, CHRISTOPHER B. MANIS AND MARK SCHORR. University of Tennessee at Chattanooga. Sex Ratios and Size Dimorphisms in the Tennessee River Gorge Turtle Community.

P1.94 CHRISTOPHER MANIS, THOMAS P. WILSON AND MARK SCHORR. University of Tennessee at Chattanooga. Relative Abundance and Species Richness of Aquatic Turtle Species in the Tennessee River Gorge.

P1.95 JOSEPH F. SIMPSON III AND THOMAS P. WILSON. University of Tennessee at Chattanooga. Community Structure, Life History and Demography of pond-breeding salamanders at an isolated wetland in Hamilton County, Tennessee.

P1.96 REBECCA DONALDSON AND KRISTIN BAKKEGARD. Samford University. Tail length and SSD in Desmognathine salamanders.

P1.97 CHARLES YEAGER AND MEGAN GIBBONS. Birmingham-Southern College. Maternal provisioning trade-off strategies of *Agalychnis callidryas*.

P1.98 JAKE KRIEGER, JOSHUA MITCHEM, AND CARLOS D. CAMP. Piedmont College. Niche Partitioning between Two Cryptic, Sympatric Species of *Desmognathus*.

P1.99 HEATHER RHEN,¹ ZACH FELIX,¹ AND JESSICA WOOTEN². Reinhardt College¹, University of Findlay². Phylogenetics of the Black Mountain salamander, *Desmognathus welteri*.

P1.100 KAYLA SMITH, GEORGE CLINE, MARK MEADE, AND CHRIS MURDOCK. Jacksonville State University. Studies on the population dynamics of freshwater turtles and the genetic variation of eastern spiny softshell turtles (*Apalone spiniferus*) in Cane Creek Anniston, Alabama.

P1.101 MARLA L. ANZALONE, DANIEL P. JACKSON, KATHERINE J. VENABLE, and KEVIN M. GRIBBINS. Wittenberg University. Spermatid Ultrastructure within the Seminiferous Epithelium of the American Alligator, *Alligator mississippiensis*.

P1.102 MALLORY CASTLEBERRY¹ ZACH FELIX¹ AND JESSICA WOOTEN². Reinhardt College¹, University of Findlay². Morphological variation in the Black Mountain salamander, *Desmognathus welteri*.

P1.103 MOLLY COMISKEY,¹ ZACH FELIX,¹ AND JESSICA WOOTEN². Reinhardt College¹, University of Findlay². Geographic variation in dorsal color pattern of the Black Mountain salamander, *Desmognathus welteri*.

P1.104 ANDREA N. DRAYER and STEPHEN C. RICHTER. Eastern Kentucky University. Comparison of amphibian communities in artificial and natural ponds in forested ecosystems.

P1.105 CHARLES R. LAWSON. Western Carolina University. Habitat Characteristics and Biometrics of the Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*) in Three Western North Carolina Streams.

Thursday Morning, April 8

10:00-11:00 **ASB Posters I:** Presenters (odd numbered posters) must be present

8:00-12:15 Oral Presentations

8:00-12:00 Southeastern Society of Parasitologists

8:00-12:15 S1: Early Successional Habitat and the Sustainability of Age Class Diversity of Eastern Upland Hardwood Forest: What, Why, Where, and How? Organized by Cathryn H. Greenberg and Beverly Collins (USDA Forest Service and Western Carolina University).

8:00-8:30 S1.1 PETER WHITE¹ AND BEVERLY COLLINS². University of North Carolina, Chapel Hill¹, Western Carolina University². Natural disturbances and the sustainability of early successional habitat and age class diversity in the eastern upland hardwood forest region.

8:30-9:00 S1.2 STEPHEN R. SHIFLEY AND FRANK R. THOMPSON. USDA Forest Service, Northern Research Station.

Patterns in early-successional forest habitat in the eastern US: Regional to landscape effects of management and disturbance.

9:00-9:30 S1.3 NICK HADDAD¹ AND DOUG LEVEY². North Carolina State University¹, University of Florida². Multi-species connectivity for upland forests.

9:30-10:00 S1.4 MARTIN SPETICH¹, STACY CLARK¹, AND CRAIG HARPER². USDA Forest Service, Southern Research Station¹, University of Tennessee². The historic role of fire in the eastern upland hardwood forest region.

10:00-10:15 Break

10:15-10:45 S1.5 DAVID L. LOFTIS, W. HENRY MCNAB, CALLIE J. SCHWEITZER, AND TARA L. KEYSER. USDA Forest Service, Southern Research Station. Changes in species composition and structure of upland hardwood communities after different silvicultural disturbances across environmental gradients.

10:45-11:15 S1.6 DAVID A. BUEHLER¹ AND KATHLEEN E. FRANZREB². University of Tennessee¹, Southern Research Station². Birds and early successional habitat in the southeastern upland hardwood forest region.

11:15-11:45 S1.7 C. E. MOORMAN¹, K. R. RUSSELL², AND C. H. GREENBERG³. University of North Carolina¹, University of Wisconsin², USDA Forest Service, Southern Research Station³. Herpetofaunal response to forest management in eastern upland hardwood forests.

11:45-12:15 S1.8 SUSAN C. LOEB AND JOY M. O'KEEFE. USDA Forest Service, Southern Research Station. Bats and gaps: the role of early successional patches in the roosting and foraging ecology of bats.

8:00-12:00 O1: Ecology – Herpetology

8:00-8:15 O1.1 DOUG HORCHLER¹, JEFF HUMPHRIES², AND THOMAS PAULEY³. Marshall University¹, North Carolina Biological Commission², Marshall University³. Long-term growth and monitoring of the Eastern Hellbender (*Cryptobranchus a. alleganiensis*) in an Eastern West Virginia stream.

8:15-8:30 O1.2 ANDREW T. COLEMAN¹, THANE WIBBELS¹, YU-HUI HUANG¹, KEN MARION¹, JOHN DINDO², AND NICOLE WHITE³. University of Alabama at Birmingham¹, Dauphin Island Sea Lab², Birmingham Southern College³. Effect of female age and size on egg size and hatchling growth in the Mississippi diamondback terrapin, *Malaclemys terrapin pileata*, and potential conservation implications.

8:30-8:45 O1.3 MICHELLE L. GUIDUGLI AND STEPHEN C. RICHTER. Eastern Kentucky University. Reproductive and spatial

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| | | ecology of an ephemeral pond-breeding amphibian community. |
| 8:45-9:00 | O1.4 | SAMUEL R. HOLCOMB AND JOHN L. CARR. University of Louisiana at Monroe. Survivorship and Causes of Mortality in Nests of the Alligator Snapping Turtle (<i>Macrochelys temminckii</i>) in Northern Louisiana. |
| 9:00-9:15 | O1.5 | LISA R. CANTWELL AND T. G. FORREST. University of North Carolina at Asheville, Response of <i>Anolis sagrei</i> to Acoustic Calls of Predatory and Non-Predatory Birds. |
| 9:15-9:30 | O1.6 | CASEY R. BRADSHAW AND THOMAS K. PAULEY. Marshall University. Effect of Snakes on Cheat Mountain Salamander (<i>Plethodon nettingi</i>) Due to Forest Fragmentation. |
| 9:30-9:45 | O1.7 | KYLE PURSEL AND JOSEPH PECHMANN. Western Carolina University. Great Laurel (<i>Rhododendron maximum</i>) effects on microhabitat use and abundances of Southern Appalachian salamanders. |
| 9:45-10:00 | O1.8 | ALEX EDWARDS ¹ AND CARLOS D. CAMP ² . Piedmont College. The Relationship between Environmental Variables and Geographic Variation in the Timber Rattlesnake (<i>Crotalus horridus</i>). |
| 10:00-10:15 | O1.9 | MITCHELL RAY AND JOHN L. CARR. University of Louisiana at Monroe. Spatial Ecology of Adult Alligator Snapping Turtles (<i>Macrochelys temminckii</i>) in Northern Louisiana. |

10:15-10:30 Break

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| 10:30-10:45 | O1.10 | KATIE MURPHY, JAYME WALDREN, AND THOMAS PAULEY. Marshall University. The Effects of Roads and Trails on Terrestrial Salamander Movement Patterns. |
| 10:45-11:00 | O1.11 | SARAH E. MIOSKI ¹ , JAYME L. WALDRON ² , AND THOMAS K. PAULEY ¹ . Marshall University ¹ , University of South Carolina ² . Movement patterns and artificial arboreal cover use of Green Salamanders (<i>Aneides aeneus</i>). |
| 11:00-11:15 | O1.12 | AARON C. GOOLEY ¹ , JAYME L. WALDRON ² , AND THOMAS K. PAULEY ¹ . Marshall University ¹ , University of South Carolina ² . Testing the Behavioral Responses of West Virginia Turtles to Roads and Vehicles. |
| 11:15-11:30 | O1.13 | STEVEN J. PRICE ^{1,2} , MICHAEL E. DORCAS ² AND ROBERT A. BROWNE ¹ . Wake Forest University ¹ , Davidson College ² . Stage- and species-specific responses of stream salamanders to urbanization. |
| 11:30-11:45 | O1.14 | KEVIN MESSENGER ¹ and JAYME WALDRON ² . Marshall University ¹ , University of South Carolina ² . Growth and age at reproductive maturity of the Carolina pigmy rattlesnake, <i>Sistrurus m. miliarius</i> (Reptilia: Serpentes). |
| 11:45-12:00 | O1.15 | CARLY NEILSON, LACY DANIKAS, AND VINCENT COBB. Middle Tennessee State University. Effect of |

substrate on the locomotor performance of recently-fed northern watersnakes.

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| 8:15-12:00 | O2: | Plant Systematics I |
| 8:15-10:00 | | Moderator: Dan Pittillo , Cullowhee, NC |
| 8:15-8:30 | O2.1 | RALPH L. THOMPSON ¹ AND STEPHANIE R. GREEN ² . Berea College Herbarium ¹ Southwest Florida Water Management District ² . Vascular flora and plant habitats of Camp Nelson Quarry, an abandoned limestone quarry in Garrard County, Kentucky. |
| 8:30-8:45 | O2.2 | LINDSAY LEVERETT AND MICHAEL WOODS. Troy University, Troy, AL. The genus <i>Crotalaria</i> (Fabaceae) in Alabama. |
| 8:45-9:00 | O2.3 | RONALD JONES ¹ AND HUMBERTO JIMENEZ-SAA ² . Department of Biological Sciences, Eastern Kentucky University, Richmond, KY 40475 ¹ , and Tropical Science Center, San Jose, Costa Rica ² . Additional notes on the woody flora of the <i>Valle de El General</i> , southern Costa Rica. |
| 9:00-9:15 | O2.4 | EMILY JEAN HICKS ¹ , ROBERT F.C. NACZI ¹ , and PAT CALIE ¹ . Eastern Kentucky University ¹ , and the New York Botanical Garden ² . Insights into the generic relationships within the family Sarraceniaceae (Ericales). |
| 9:15-9:30 | O2.5 | WAYNE BARGER ¹ , BRIAN HOLT ¹ , AND ALAN CRESSLER ² . ¹ State Lands Division, Natural Heritage Section, AL-DCNR, ² U.S. Geological Survey, Atlanta, GA 30360. <i>Asplenium abscissum</i> Willd. (Cutleaf Spleenwort) New to Alabama. |
| 9:30-9:45 | O2.6 | RICHARD A. MATTHEWS ¹ AND KERRY D. HEAFNER ² . Old Dominion University ¹ , Louisiana Purchase Gardens and Zoo ² . <i>Isoetes austro-caroliniana</i> , a new quillwort from upstate South Carolina. |
| 9:45-10:00 | O2.7 | W. SMITH ¹ and MARCIA WATERWAY ² . ¹ Eastern Kentucky University, ² McGill University. Species delineation and niche evolution in the <i>Carex roanensis</i> (Cyperaceae) complex. |
| 10:00-10:30 Break | | |
| 10:30-10:45 | O2.8 | ASHLEY B. MORRIS ¹ , CATHERINE H. GRAHAM ² , DOUGLAS E. SOLTIS ³ AND PAMELA S. SOLTIS ³ . University of South Alabama ¹ , Stony Brook University ² , University of Florida ³ . Everything but the kitchen sink: new phylogeographic analyses in <i>Fagus grandifolia</i> . |
| 10:45-11:00 | O2.9 | JAMES B. BECK AND MICHAEL D. WINDHAM. Duke University. Microsatellites as tools for species delimitation in recently-diverged flowering plant groups; an example from <i>Boechera</i> (Brassicaceae). |

11:00-11:15 O2.10 SHAW, JOEY¹, JUN WEN², IAN COHEN¹, ROSMARIE HABERLE³, CHIN SIEW-WAI³, AND DANIEL POTTER³. The University of Tennessee at Chattanooga¹, The Smithsonian Institution², The University of California at Davis³. Chloroplast DNA phylogeny of *Prunus* L. (Rosaceae) using *trnS-trnGtrnG*, *psbA-trnH*, *trnL-trnL-trnF*, and *matK* cpDNA Sequences.

11:15-11:30 O2.11 AMANDA SAVILLE¹, ALEXANDER KRINGS¹, ROSE GRINNAN¹, AND WADE WALL¹. North Carolina State University¹. Delimiting species boundaries in the *Dichanthelium dichotomum* complex (Poaceae).

11:30-11:45 O2.12 DAVID C. INGERSOLL¹ AND TIMOTHY MOTLEY¹. Old Dominion University¹, Dept of Biology, Norfolk VA 23529. Establishing a Regional Phenology Network in Southeastern Virginia.

11:45-12:00 O2.13 IAN M. COHEN AND JOEY SHAW. The University of Tennessee at Chattanooga. DNA Barcoding: Testing the Utility of One Coding and Three Noncoding Chloroplast DNA.

8:15-12:00 Ecology – Fire

8:15-8:30 O3.1 JOAN WALKER, BRYAN MUDDER, AND SHAWNA REID. Southern Research Station, US Forest Service. Prescribed fire effects on *Hexastylis naniflora*, a threatened forest perennial.

8:30-8:45 O3.2 JONATHAN ADAMS, ROBERT CARTER, CHRIS MURDOCK, AND BENJIE BLAIR. Department of Biology, Jacksonville State University. Effects of prescribed burning regimes on small mammal populations and *Borrelia lonestari* incidence on the Talladega National Forest, AL.

8:45-9:00 O3.3 ERIC S. MENGES AND STACY A. SMITH. Archbold Biological Station. Fire and hurricane effects on annual survival of 14 co-occurring Florida scrub plants: patterns from two decades of demographic research.

9:00-9:15 O3.4 JOHN A. BARONE, LEQUITA W. ADAMS, A. CARMEN COAN, MICHAEL J. JOINER, COURTNEY N. RAYFORD AND KEVIN S. BURGESS. Columbus State University. Influence of individual, local and regional factors on treehole abundance.

9:15-9:30 O3.5 DAMIEN WILLIS, ROBERT CARTER, CHRIS MURDOCK, AND BENJIE BLAIR. Department of Biology, Jacksonville State University. Effects of prescribed burning regimes on tick populations and *Borrelia lonestari* incidence on the Talladega National Forest, AL.

9:30-9:45 O3.6 MATHEW MORGAN, RUSTY NALL, AND ROBERT CARTER. Department of Biology, Jacksonville State University. Using fecal counts to determine white-tailed

deer (*Odocoileus virginianus*) populations in four burning regimes on the Talladega National Forest, AL.
KERI TEAL AND JAMES FRALISH. Southern Illinois University. Species convergence in three fire dependent communities in north central Wisconsin.

10:00-10:30 Break

10:30-10:45 O3.8 CARI LELAND¹, TOM SALADYGA², AMY HESSL², PETER BROWN³, BAATARBILEG NACHIN⁴, BYAMBAGEREL SURAN⁵ AND NEIL PEDERSON¹. Eastern Kentucky University¹, West Virginia University², Rocky Mountain Tree Ring Research³, National University of Mongolia⁴, Colorado State University⁵. Climate and fire interactions in *Pinus sylvestris* forests of northern Mongolia.

10:45-11:00 O3.9 CHASE C. ROSENBERG, BRIAN C. MCCARTHY, AND JARED L. DEFOREST, Department of Environmental and Plant Biology, Ohio University. Potential effects of the decomposition of hybrid chestnut on nutrient cycling in Eastern North American forests.

11:00-11:15 O3.10 PHOEBE WRIGHT, MELISSA CREGGER, NATHAN J. SANDERS, and AIMEE T. CLASSEN. University of Tennessee. Interactions among insect herbivory, invasive plants, and soil nutrients alters soil microbial function.

11:15-11:30 O3.11 RACHEL E. SCHROEDER¹, FRANK P. DAY¹, DANIEL B. STOVER², ALISHA L. P. BROWN¹, JOHN R. BUTNOR³, C. ROSS HINKLE⁴, AND BERT G. DRAKE⁵. Old Dominion University¹, Earthwatch Institute², U.S. Forest Service³, University of Central Florida⁴, Smithsonian Environmental Research Center⁵. Root biomass in a Florida scrub-oak ecosystem after 11 years of CO₂ enrichment.

11:30-11:45 O3.12 MELISSA A. CREGGER¹, NATE G. McDOWELL², WILLIAM T. POCKMAN³, and AIMEE T. CLASSEN¹. University of Tennessee¹, Los Alamos National Laboratory², and University of New Mexico³. Drought changes nitrogen availability in a pinyon-juniper woodland.

11:45-12:00 O3.13 LAUREN BREZA, LARA SOUZA, NATHAN J. SANDERS, AND AIMEE T. CLASSEN. University of Tennessee. Intra-specific variation in ecosystem function within a dominant old-field species.

8:00-12:00 O4: Cell and Molecular Biology; Physiology and Development I

8:00-10:00 Moderator: Premila Achar, Kennesaw State University

8:00-8:15 O4.1 MARK R. WILSON, MADELINE HILL, AND BRITTANIA J. BINTZ. Western Carolina University. Comparison of commercially available DNA extraction protocols from low-copy number forensic samples.

8:15-8:30 O4.2 RYAN J. SEDDON AND MATTHEW KLUKOWSKI, Middle Tennessee State University. The effects of acute stress on corticosterone, leukocytes, and prostaglandin E2 in male Southeastern Five-lined Skinks (*Plestiodon inexpectatus*).

8:30-8:45 O4.3 CAROLINE WALLACE AND VICTORIA TURGEON. Furman University. The Role of Cx32 in Schwann Cell Myelination.

8:45-9:00 O4.4 PERRIE HORD AND XUEYA HAUGE. Kennesaw State University. Identification and characterization of cis-regulatory elements in a deletion junction region for 9p-syndrome.

9:00-9:15 O4.5 JUSTIN RHEUBERT AND DAVID SEVER. Southeastern Louisiana University. Morphology of the extra-testicular ducts in the Mediterranean Gecko, *Hemidactylus turcicus*.

9:15-9:30 O4.6 NOBEL EGEKWU. Old Dominion University. Cloning and expression of an anthrax protein for use in the development of a thermopile biosensor.

9:30-9:45 O4.7 WILLIAM WATKINS¹, WILLIAM BROOKS¹, REBECCA NEAL¹, KEVIN BRINCK³, PAUL BANKO², MARTIN CIPOLLINI¹ AND GARY BRETON¹. Berry College¹, U. S. Geological Survey, Pacific Island Ecosystems Research Center instead of USGS Pacific Island Ecosystems Research Center² and Hawai'i Cooperative Studies Unit, Pacific Aquaculture and Coastal Resources Center, University of Hawai'i at Hilo³-- Intraspecific developmental variation in quinolizidine alkaloids of mamane (*Sophora chrysophylla*) seed embryos: relevance to specialist seed predation by palila (*Loxioides bailleui*).

9:45-10:00 O4.8 WEI REN¹ AND STEPHEN J. BEEBE^{1, 2}. Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk Virginia¹, Department of Physiological Sciences, Eastern Virginia Medical School, Norfolk Virginia². Nanosecond pulsed electric fields (nsPEFs) activate multiple apoptosis pathways in E4 squamous carcinoma cells *In Vitro*

10:00-10:30 Break

10:30-10:45 O4.9 MATTHEW KLUKOWSKI. Middle Tennessee State University. Effects of breeding season, testosterone and ACTH on the corticosterone response of free-living male fence lizards (*Sceloporus undulatus*).

10:45-11:00 O4.10 KAREN R. HASTY, MALLORY L. WEST, AND DAVID R. WESSNER. Davidson College. Disassembly of

ethanol-resistant reovirus strains and associated effects on virus-induced apoptosis.

11:00-11:15 O4.11 MALLORY L. WEST, KAREN R. HASTY, AND DAVID R. WESSNER. Davidson College. Replication properties of reovirus disassembly mutants.

11:15-11:30 O4.12 JAMES R. RAYBURN¹ AND MENDEL FRIEDMAN². Biology Department, Jacksonville State University¹, ARS-USDA Western Regional Research Center². N-acetyl-L-Cysteine Protects Frog Embryos against Acrylamide-Induced Malformations and Mortality.

11:30-11:45 O4.13 LI-JU CHEN, CHRISTOPHER MURDOCK, AND FRANK ROMANO. Jacksonville State University. Intercontinental geographic variation in 18s rDNA within tardigrade individuals, species, and populations.

11:45-12:00 O4.14 MIJITABA HAMISSOU. Jacksonville State University, Jacksonville, AL 36265-Comparative Analyses of Callose Biosynthesis in *Sorghum bicolor* (L.) Moench and *Nicotiana tabacum* Using Molecular and Microscopic Techniques.

8:00-11:30 O5: Ecology – Niche, Growth, and Reproductive Effort I

8:00-8:15 O5.1 ANDREW LAUGHLIN¹ AND FRED J. ALSOP III¹. East Tennessee State University¹. Hermit Thrush (*Catharus guttatus*) and Veery (*C. fuscescens*) breeding habitat associations in Southern Appalachian Spruce-Fir forests.

8:15-8:30 O5.2 STEVEN R. HILL. Illinois Natural History Survey, University of Illinois, Champaign. Results of transplanting and re-establishment of *Aster furcatus* Burgess (Asteraceae) in Illinois.

8:30-8:45 O5.3 DAKOTAH A. CAMPBELL and CHRISTOPHER A. ADAMS. King College. Seed dormancy and germination ecology of *Robinia hispida* and *Calycanthus floridus* var. *glaucus*.

8:45-9:00 O5.4 CAITLIN M. GUSSENHOVEN AND H. DAWN WILKINS. University of Tennessee at Martin. Niche partitioning and overlap between wintering woodpeckers in a bottomland hardwood forest in northwest Tennessee.

9:00-9:15 O5.5 AMANDA R. ROTELLA AND JAMES O. LUKEN. Coastal Carolina University. The growth and distribution of water hyacinth in a tidal blackwater river system, SC

9:15-9:30 O5.6 JONATHAN L. HORTON¹ AND MATTHEW J. GERMINO². University of North Carolina at Asheville¹, Idaho State University². Response of native and exotic vegetation to supplemental surface and deep water in a sagebrush steppe.

9:30-9:45 O5.7 ROBERT J. WARREN II^{1,2}, VOLKER BAHN² AND MARK A. BRADFORD¹. Yale University¹ Wright State University². Niche limitations of a vigorous exotic

invader, *Microstegium vimineum*, across temperate forest ecotones.

9:45-10:00 O5.8 MARY C. MILLS¹, GARY N. ERVIN¹, BRIAN S. BALDWIN¹, RACHEL C. JOLLEY¹ AND DIANA M. NEAL¹, Mississippi State University. Response of rivercane (*Arundinaria gigantea*) to native and exotic grass competition and site preparation techniques for canebrake restoration.

10:00-10:30 Break

10:30-11:30 Moderator: **Howard Neufeld**, Appalachian State University

10:30-10:45 O5.9 HEATHER GRISCOM¹. James Madison University¹. Niche differentiation of *Castanea dentata* (American chestnut), *Castanea* hybrids, and other native tree species in Virginia.

10:45-11:00 O5.10 CAITLIN COSTELLE, KELLI HARRIS, LYNDSEY BOLANOS, SHARON LEE, AND PATRICK CALIE. Eastern Kentucky University. Dynamics of 17 populations of sunflowers (*Helianthus annuus* - Asteraceae) in central Kentucky.

11:00-11:15 O5.11 KEITH GILLAND AND BRIAN C. McCARTHY. Ohio University. Site-Specific Factors and the establishment of American chestnut (*Castanea dentata*) on reclaimed mine lands.

11:15-11:30 O5.12 ROBYN M. NADOLNY AND ROBERT K. ROSE. Old Dominion University. Growth and Survival of Volunteer Loblolly Pine (*Pinus taeda*) Trees in an Oldfield in Eastern Virginia.

Thursday Afternoon, April 8

2:30-3:30 **ASB Posters I:** Presenters (even numbered posters) must be present

1:30-5:30 Oral Presentations**1:30-5:30 Southeastern Society of Parasitologists**

1:30-5:15 SY1: **Early Successional Habitats and the Sustainability of Age Class Diversity of Eastern Upland Hardwood Forest: What, Why, Where, and How?** Organized by Cathryn H. Greenberg and Beverly Collins (USDA Forest Service and Western Carolina University).

1:30-2:00 S1.9 GORDON S. WARBURTON¹, CRAIG HARPER.² and KENDRICK WEEKS³. North Carolina Wildlife Resources Commission^{1, 3}, University of Tennessee, Knoxville². Conservation and management of early successional

and other disturbance dependant habitats for wildlife in the Eastern United States; a manager's perspective.

2:00-2:30 S1.10 J. DREW LANHAM. Clemson University. Fields of Shrub-Scrub Dreams: Opportunities for Wildlife Conservation in Novel Places.

2:30-3:00 S1.11 KATHERINE ELLIOTT¹, CRAIG HARPER², AND BEVERLY COLLINS³. ¹USDA Forest Service, Southern Research Station, Coweeta Hydrologic Laboratory, ²University of Tennessee, ³Western Carolina University. Herbaceous layer response to type and severity of disturbance over time.

3:00-3:15 Break

3:15-3:45 S1.12 CATHRYN H. GREENBERG¹, DOUGLAS J. LEVEY², J. DREW LANHAM³, MARIA WHITEHEAD⁴, AND CRAIG HARPER⁵. USDA Forest Service, Southern Research Station¹, University of Florida², Clemson University³, The Nature Conservancy⁴, University of Tennessee⁵. Forest food resources for wildlife and early successional habitat in the eastern upland hardwood forest region.

3:45-4:15 S1.13 JAMES M. VOSE AND CHELCY R. FORD. USDA Forest Service Coweeta Hydrologic Laboratory. Early Successional Habitat and Water Resources: A Synthesis of the Impacts of Forest Cutting and Other Forest Management Activities on Stream Water Quantity and Quality

4:15-4:45 S1.14 TARA L. KEYSER. USDA Forest Service, Sourthern Research Station. Creation and maintenance of early successional habitat: implications for carbon management.

4:45-5:15 S1.15 DAVE N. WEAR. USDA Forest Service, Southern Research Station. Forecasting the Future – projecting forest type and age class diversity in the eastern upland hardwood forest region.

1:30-5:00 O6: Ecology – Physiological Ecology

1:30-1:45 O6.1 BRETT A. DEGREGORIO^{1,2} AND AMANDA SOUTHWOOD². Bald Head Island Conservancy¹, University of North Carolina at Wilmington². Temperature profiles within Loggerhead Sea Turtle (*Caretta caretta*) nests on Bald Head Island, NC.

1:45-2:00 O6.2 DARRELL WHITE, CHRISTINE SMALL AND BREANNA HARGOBOL. Radford University. Allelopathic influences of the invasive *Ailanthus altissima* on a native and non-native herb.

2:00-2:15 O6.3 HOWARD S. NEUFELD¹, DERICK B. POINDEXTER¹, PAULA MURAKAMI² AND PAUL SCHABERG². Appalachian State University¹ and U.S. Forest Service Northern Research Station². Observations on the

relationship between above and below-ground anthocyanin production in *Galax urceolata* growing in sunny and shady habitats.

2:15-2:30 O6.4 SHERI SHIFLETT AND DONALD YOUNG. Virginia Commonwealth University. Comparisons in water relations of three evergreen shrubs in an eastern temperate forest understory.

2:30-2:45 O6.5 STEVEN T BRANTLEY, JULIE C NAUMANN AND DONALD R YOUNG. Virginia Commonwealth University. Application of hyperspectral vegetation indices for predicting leaf area index in *Morella cerifera* and *Elaeagnus umbellata* shrub thickets.

2:45-3:00 O6.6 JENNIFER BOYD AND J. HILL CRADDOCK. University of Tennessee at Chattanooga. Not made for the shade? Comparing the shade tolerance of *Castanea dentata*, *Castanea mollissima* and their hybrids.

3:00-3:30 Break

3:30-3:45 O6.7 ALLISON ROLLINS, CARLY WINTERS, JENNIFER ZETTLER, BIL LEIDERSDORF, AND GREG KNOFCZYNSKI. Armstrong Atlantic State University. Does a diet of native versus non-native ants affect antlion development?

3:45-4:00 O6.8 NICHOLAS LEVELSMIER¹, VANESSA SANDOVAL¹, CASANDRA REYES-GARCIA², THOMAS MCELROY¹, JOSE LUIS ANDRADE², JUAN MANUEL DUPUY², PAULA C. JACKSON¹. Kennesaw State University¹, Centro De Investigacion Cientifica De Yucatan². Photosynthetic Rates for Three Tree Species Growing in Plots of Different Successional Age in a Tropical Dry Forest of Yucatan, Mexico.

4:00-4:30 O6.9 SPENCER N. BISSETT AND DONALD R. YOUNG. Virginia Commonwealth University. Responses to salinity exposure by the coastal nitrogen-fixing vine *Strophostyles helvola*.

4:34-4:45 O6.10 CARRIE C. KLASE AND AMY E. BOYD. Warren Wilson College. Do wine-red *Calycanthus floridus* flowers elevate intrafloral temperature relative to ambient conditions?

4:45-5:00 O6.11 KRISTIN SCHWARZAUER, JAMES RAYBURN AND SAFAA ALHAMDANI. Jacksonville State University. The Potential Use of *Pueraria montana* var. *lobata* in Phytoremediation.

1:30-5:30 O7: Plant Systematics II

1:30-1:45 O7.1 MAX LANNING AND KATHY MATHEWS. Western Carolina University. The Southern Appalachian saxifrage species complex: *Micranthes careyana* and *M. caroliniana*.

1:45-2:00 07.2 RANDALL TERRY. Lamar University. Re-evaluation of Morphological and Chloroplast DNA Variation in *Juniperus osteosperma* Hook and *Juniperus occidentalis* Torr. Little (Cupressaceae) and their Putative Hybrids.

2:00-2:15 07.3 CATHERINE BUSH¹, PETER W. FRITSCH², BONI C. CRUZ², ANGELA B. MARTINS³, LU LU⁴ AND KATHLEEN A. KRON¹. Wake Forest University¹, California Academy of Sciences², University of Campinas, Brazil³, Kunming Institute of Botany, China⁴. The phylogeny and morphology of the Brazilian *Gaultheria* (Ericaceae) species.

2:15-2:30 07.4 CHARLES HORN. Newberry College. Heterophylly in the aquatic plant *Didipilis diandra* (Lythraceae).

2:30-2:45 07.5 ROLAND P. ROBERTS, DONALD R. SMITH III, AYODEJI OLUYADI, BRYON SELLMAN, AND CHAO YANG. Towson University. Phylogeography of *Arabidopsis lyrata* ssp *lyrata* (Brassicaceae) in eastern North America.

2:45-3:00 07.6 ROLAND P. ROBERTS, NATALIA CEAICOVSCAIA, KEMARDO HENRY AND GAGANPREET SINGH. Towson University. The rabbitbrush saga continues: Insights from combined analyses of nuclear and chloroplast sequence data.

3:00-3:30 Break

3:30-3:45 07.7 JOHN KARTESZ AND MISAKO NISHINO. Biota of North America Program. Phytogeography and Taxonomy of the North American Flora Assessed by way of Digital Technology.

3:45-4:00 07.8 HERRICK H. K. BROWN¹, KATHERINE A. BOYLE¹, DIXIE Z. DAMREL³, JOHN B. NELSON² AND ALBERT B. PITTMAN¹. South Carolina Department of Natural Resources Heritage Trust Program¹, University of South Carolina Herbarium (USCH)², Clemson University Herbarium (CLEMS)³. Specify and beyond: Broader applications for natural history collections databases.

4:00-4:30 07.9 M. STEVEN FRUCHES AND RANDALL SMALL. University of Tennessee. The role of hybridization in generating species- and population-level diversity in *Sarracenia*.

4:34-4:45 07.10 CHRIS STOEHREL AND KATHY MATHEWS. Western Carolina University. Phylogeny of the *Trillium erectum* complex.

4:45-5:00 07.11 ANNA BECKER AND RANDALL SMALL. University of Tennessee. Population genetics of *Penstemon tenuiflorus* and *P. hirsutus* (Plantaginaceae).

5:00-5:15 07.12 NADIA TALENT, RON W. LANCE, AND TIMOTHY A. DICKINSON. Royal Ontario Museum. North American *Crataegus* (Rosaceae) centers of diversity: a fundamentally different character in the east and west?

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| 1:30-5:30 | O8: | Ecology – Species Interactions and Distributions |
| 1:30-1:45 | O8.1 | MARC A MILNE AND DEBORAH A WALLER. Old Dominion University. Spider residency contributes nutrients to the purple pitcher plant, <i>Sarracenia purpurea</i> . |
| 1:45-2:00 | O8.2 | BRADLEY P. GREENE AND TIMOTHY O. MENZEL. Piedmont College. Video analysis of interactions between <i>Aphaenogaster carolinensis</i> and four other ground foraging forest ant species. |
| 2:00-2:15 | O8.3 | SONIA M. HERNANDEZ, LOGAN WEYGANDT ² , RON CARROLL ³ and SUSAN SANCHEZ ⁴ . ¹ Warnell School of Forestry and Natural Resources and the Southeastern Cooperative Wildlife Disease Study, University of Georgia ¹ . John Hopkins Medical School ² . The Odum School of Ecology, University of Georgia ³ . The Athens Diagnostic Laboratory, College of Veterinary Medicine, University of Georgia ⁴ . Is the antimicrobial resistance of the fecal flora of Neotropical birds related to human activity? |
| 2:15-2:30 | O8.4 | SONIA M. HERNANDEZ ^{1,2} , SUSAN SANCHEZ ³ , ROBERT COOPER ¹ , MICHAEL J. YABSLEY ^{1,2} , C. RON CARROLL ⁴ . Warnell School of Forestry and Natural Resources ¹ and the Southeastern Cooperative Wildlife Disease Study, College of Veterinary Medicine ² , University of Georgia. Department of Infectious Diseases and Athens Diagnostic Laboratory, College of Veterinary Medicine, University of Georgia ³ . Odum School of Ecology and College of Veterinary Medicine, University of Georgia ⁴ . Do shade-grown coffee plantations ("Bird-Friendly" coffee) pose a disease risk for Neotropical birds in Costa Rica? |
| 2:30-2:45 | O8.5 | KATHERINE F. FREEMAN AND AMY E. BOYD. Warren Wilson College. Dissection of sensory components of pollinator attraction to <i>Calycanthus floridus</i> (Calycanthaceae). |
| 2:45-3:00 | O8.6 | OLIVIA MESSINGER AND SEDONIA SIPES. Southern Illinois University Carbondale. Scents and sense-ability; host recognition in a specialist bee, <i>Diadasia</i> . |
| 3:00-3:15 | O8.7 | TERESA A. PORTER ¹ AND JENNIFER CRUSE-SANDERS ² . Salem College ¹ , Atlanta Botanical Garden ² . Cactus (<i>Stenocereus stellatus</i>) domestication favors larger bat pollinators. |
| 3:15-3:30 Break | | |
| 3:30-3:45 | O8.8 | STEPHEN J. BRZYKCY AND SEDONIA D. SIPES. Department of Plant Biology, Southern Illinois University Carbondale. Host plant recognition in the eastern digger bee (<i>Ptilothrix bombiformis</i> Cr.), an eclectic specialist. |

3:45-4:00 O8.9 MELISSA SIMPSON, SEDONIA SIPES, AND KARA HUFF-HARTZ. Southern Illinois University Carbondale. The floral scent chemistry of *Hibiscus moscheutos* and *Ipomoea pandurata*, and the role of chemistry in host selection by the eastern digger bee, *Ptilothrix bombiformis*, an eclectic specialist.

4:00-4:30 O8.10 GEOFFREY HIGHTOWER, KALIA MILLER, AND RENEE CARLETON. Berry College. Effect of nest ectoparasites on plumage coloration of nestling eastern bluebirds (*Sialia sialis*).

4:34-4:45 O8.11 ZNAR BARWARY AND JOHN McCREADIE. University of South Alabama. Vertical stratification of carrion flies (Diptera).

4:45-5:00 O8.12 CHRISTOPHER MOWRY¹, NICOLE ACUFF¹, JOHN LAWRENCE¹ AND RANDAL HALE². Berry College¹, North River Geographic Systems, Inc.². Home range, habitat use and morphology of coyotes (*Canis latrans*) in northwest Georgia.

5:00-5:15 O8.13 NADA HYATT AND JONATHAN STORM. University of South Carolina Upstate. Use of Urban Greenways by Small Mammals.

5:15-5:30 O8.14 M. PATRICK BRANNON, MELISSA A. BURT, DAVID M. BOST, AND MARGUERITE C. CASWELL. Highlands Biological Station, Highlands NC. An examination of shrew species distributions along an elevational gradient in the southern Appalachians using data from discarded bottles.

1:30-5:30 O9: Cell and Molecular Biology; Physiology and Development II

1:30-1:45 O9.1 CHERYL L. SESLER, GEORGE CLINE, CHRIS MURDOCK, AND BENJIE BLAIR. Jacksonville State University. Molecular Identification of Gastrointestinal Bacteria from Adult Cope's Grey Treefrogs (*Hyla chrysoscelis*).

1:45-2:00 O9.2 MEGAN ARRINGTON, JACK SUMMERS, JEFF SCHMITT, JONATHAN MARKLEY, MICHELLE YOST, AND ERIN PARRIS. Western Carolina University. Superoxide Dismutase Inhibitor Screening and Characterization Using ¹⁹F NMR.

2:00-2:15 O9.3 THOMAS E. MEIGS. University of North Carolina Asheville. Dissection of Ga12-mediated Signaling Pathways through Mutational Analysis of Effector Binding.

2:15-2:30 O9.4 WILLIAM SMOLSKI. University of North Carolina at Asheville. A structure-based analysis of Gá12 interaction with target signaling proteins.

2:30-2:45 O9.5 ELIZABETH WALKER AND HEATHER EVANS-ANDERSON. Winthrop University. Role of FOXO

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| | | transcription factors in the myocardium of <i>Ciona intestinalis</i> . |
| 2:45-3:00 | O9.6 | LIANG YU AND ANNA JENG. Old Dominion University. The Effects of Particulate Matters on Altering Nitric Oxide Bioavailability in Endothelial Cells. |
| 3:00-3:15 Break | | |
| 3:15-3:30 | O9.7 | AMANDA SCHOONOVER AND LORI SEISCHAB. Western Carolina University. The effects of diethyldithiocarbamate on <i>E. coli</i> growth in the presence of antibiotics. |
| 3:30-3:45 | O9.8 | DONALD PATTERSON AND CHRISTOPHER COBURN. Western Carolina University. Using a Catalytic Beacon to Identify Effective siRNA Target Sites. |
| 3:45-4:00 | O9.9 | LACY DANIKAS AND VINCENT COBB. Middle Tennessee State University. Latitudinal variation in thermal physiology of the northern watersnake, <i>Nerodia sipedon</i> . |
| 4:00-4:30 | O9.10 | INDRANI DEY, PRANJAL NAHAR, TREY SLANEY, AND CHRISTI MAGRATH. Troy University. Transcription termination activity of ARS elements in <i>Saccharomyces cerevisiae</i> . |
| 4:34-4:45 | O9.11 | MAYUR FAGWANI AND CHRIS R. GISSENDANNER. Department of Biology, University of Louisiana at Monroe. Investigation of G1/S regulation by the NHR-6 nuclear receptor transcription factor in <i>C. elegans</i> . |
| 4:45-5:00 | O9.12 | TODD EGERTON, MATTHEW SEMCHESKI, HAROLD MARSHALL, RICHARD HUBBARD, ANDREW GORDON, AND PATRICK HATCHER. Old Dominion University. Algal biomass to biodiesel: year two; seasonal characterization of phytoplankton composition in an open raceway and related studies. |
| 5:00-5:15 | O9.13 | JENNIFER KELLY, BENJIE BLAIR, MARK MEADE AND CHRIS MURDOCK. Jacksonville State University. The effects of <i>Eubacterium cellulosolvens</i> 5494, a possible probiont, on growth rates in <i>Oreochromis niloticus</i> . |
| 5:15-5:30 | O9.14 | ERIKA BALOGH, J.M. HERR, JR., MIHÁLY CZAKÓ, AND LÁSZLÓ MÁRTON. University of South Carolina. Defective development of male and female gametophytes in <i>Arundo donax</i> L. |
| 1:45-5:30 | O10: | Ecology – Niche, Growth, and Reproductive Effort II |
| 1:45-3:00 | | Moderator: Claudia Jolls , East Carolina University |
| 1:45-2:00 | O10.1 | JACOB HILTON ¹ , WADE WALL ² , THOMAS WENTWORTH ² , JANET GRAY ³ , MATTHEW HOHMANN ⁴ , AND WILLIAM HOFFMANN ² . Coastal Sciences Department, University of Southern |

Mississippi¹, Department of Plant Biology, North Carolina State University, Raleigh, NC 27695², Endangered Species Branch, Fort Bragg, North Carolina³, US Army Corps of Engineers, Construction Engineering Research Laboratory⁴. Effects of light and temperature on *Pyxidanthera barbulata* var. *brevifolia* germination.

2:00-2:15 O10.2 KRISTIE S WENDELBERGER¹, JOYCE MASCHINSKI², ALAN WEAKLEY¹, PETER WHITE¹. University of North Carolina¹, Fairchild Tropical Botanic Garden². Using an experimental technique to determine microsite preference when introducing endangered species.

2:15-2:30 O10.3 MATT PARDUE AND KIM MARIE TOLSON. Department of Biology, College of Arts and Sciences, University of Louisiana at Monroe, Monroe, LA 71209-0520. Prairie restoration efforts in northeast Louisiana to benefit grassland birds.

2:30-2:45 O10.4 JOHNNY RANDALL AND MIKE KUNZ. North Carolina Botanical Garden, University of North Carolina at Chapel Hill. Reintroduction of *Ptilimnium nodosum* to the Deep River, NC (Apiaceae).

2:45-3:00 O10.5 MICHAEL KUNZ¹, JOHNNY RANDALL¹ and MISTY BUCHANAN². North Carolina Botanical Garden, University of North Carolina at Chapel Hill¹, North Carolina Natural Heritage Program². Translocation of the federally endangered *Lysimachia asperulifolia* (Myrsinaceae).

3:00-3:30 Break

3:30-3:45 O10.6 KEITH HOFFMAN AND LAURA DeWALD. Western Carolina University. Patterns of Recruitment and Culm Morphology in *Arundinaria gigantea* ([Walt.] Muhl.)

3:45-4:00 O10.7 CHRISTINE SMALL¹, MATT BRENNAN¹ AND JIM CHAMBERLAIN². Radford University¹, USDA Forest Service². Experimental harvesting effects on black cohosh (*Actaea racemosa*), a southern Appalachian medicinal plant.

4:00-4:30 O10.8 DIANA M. NEAL¹, RACHEL JOLLEY¹, BRIAN BALDWIN¹, GARY ERVIN¹, MARGARET CERTAIN², JOHN SEYMOUR³, AND JULIAN CAMPBELL³. Mississippi State University¹, University of South Carolina², Bluegrass Woodland Restoration Center³. Maximizing seed germination methods to enhance Rivercane [*Arundinaria gigantea* L. (Walter) Muhl] seedling production for habitat restoration programs.

4:34-4:45 O10.9 M. LEIGH NELSON¹ AND JENNIFER RHODE WARD². New College Florida¹, University of North Carolina Asheville². Variation in reproductive effort among morphotypes in a hybrid plant complex.

4:45-5:00 O10.10 RYAN B. HOMSHER AND BRIAN C. MCCARTHY. Ohio University. Above ground resource allocation of southeastern Ohio oaks.

5:00-5:15 O10.11 HEATHER E. TRAN, LARA SOUZA, AND AIMEE T. CLASSEN. University of Tennessee. Intra-specific variation in phenology and its effect on fitness.

5:15-5:30 O10.12 CLAUDIA L. JOLLS, MEAGHAN D. CUTCHIN AND THOMAS FINK. East Carolina University. Hedging our bets: in search of heterocarpy in *Packera tomentosa*.

Friday Morning, April 9**8:00-4:00 ASB Posters II (numbers P2.1-P2.67)**

P2.1 CHRISTOPHER STEED¹, SANDY TRAIL¹, J. TODD FRENCH², AND BENJIE BLAIR¹. Jacksonville State University¹, Mississippi state University². Effects on survival of *Rhodotuorula glutinis* post electroporation with varied recovery media.

P2.2 JENNIFER PATTERSON AND LORI SEISCHAB. Western Carolina University. Utilizing paraquat to generate endogenous superoxide in *E. coli*.

P2.3 BENJIE BLAIR. Jacksonville State University. Effect of excess carbohydrate on *Clostridium cellulovorans* after growth in cellulose.

P2.4 SHAADI F. ELSWAIFI; JOHN SCHWARTZ; AND JAMES R. PALMIERI. Edward Via Virginia College of Osteopathic Medicine. Ehrlichiosis: a case report from Lynchburg, Virginia.

P2.5 MUHAMMED F. CASIM AND LYNN O. LEWIS. University of Mary Washington. Correlation of chronic diseases with the presence of *T. whipplei* DNA in saliva.

P2.6 PRESTON M SMITH AND PREMILA N ACHAR. Kennesaw State University. Real time PCR to detect and quantify Aflatoxin producing genes in *Aspergillus flavus* and *A. parasiticus* in Georgia Peanuts.

P2.7 MALGORZATA DMITRYJUK AND ELZBIETA LOPIENSKA-BIERNAT. University of Warmia and Mazury, Faculty of Biology, Department of Biochemistry, Olsztyn, Poland. The expression of trehalose 6-phosphate synthase gene in *Ascaris suum* tissues.

P2.8 GARY J TACKLING, CARRIE B WIESE, AND MARGARET J KOVACH. University of Tennessee at Chattanooga. Microsatellite variability, CGI methylation and differential expression patters in colon cancer.

P2.9 TYLER WALKER, TONYA A. CARVER AND MARGARET J. KOVACH. University of Tennessee at Chattanooga. The Effects Of Abnormal *PMP22* On Gene Expression Profiles.

P2.10 SUSAN W. MURRAY. Mississippi Museum of Natural Science. Genetic research and the genetic resources collection at the Mississippi Museum of Natural Science.

P2.11 ADAM HAWKINS AND IRMA SANTORO. Reinhardt College. Is Maize PAN1 a PAK Protein?

P2.12 ROGER SAUTERER AND RHONDA JOHNSON. Jacksonville State University. Extraction procedures for whole amphibian embryos for 2-D gel electrophoresis using IPG strips

P2.13 MERIDETH VAN WICK AND DWAYNE WISE. Mississippi State University. Characterization of cell death in Chinese Hamster Ovary (CHO) cells undergoing mitosis without genome replication.

P2.14 CHUNYU DUAN, GINA M. TONG, FENG-RU ZHAO, AND DAVID M. HOLLIS. Furman University. Isolation of an actin-related protein 2/3 -like subunit (ARPC1) in the adult teleost fish brain in response to injury.

P2.15 VALARIE BURNETT. University of South Carolina-Union, University of South Carolina School of Medicine. An immunohistochemical study of interneurons in rat perirhinal cortex and the effects of Li-pilocarpine-induced status epilepticus.

P2.16 MADELEINE CHALFANT AND KAREN BERND. Davidson College. 17- beta estradiol administration timing alters lung cell response to ozone exposure.

P2.17 JESSICA ANDERSON, STEVEN LLOYD AND RYAN SHANKS. North Georgia College & State University. Methamphetamine directly affects the BV-2 murine microglia cell line.

P2.18 BEAU CORKILL, RICK ROBERTS, EZRA BORTNER, TREVOR MOTT, STEVEN LLOYD AND RYAN SHANKS. North Georgia College & State University. Methamphetamine-induced changes in reactive microglia in the ventromedial hypothalamus.

P2.19 RYAN HARRIS, STEPHANIE SONGER, STEVEN LLOYD AND RYAN SHANKS. North Georgia College & State University. The effect of methamphetamine on the spleen in C57Bl/6J mice.

P2.20 STACIA WOOD, JOHN WORKMAN, IRENE KOKKALA, STEVEN LLOYD AND RYAN SHANKS. North Georgia College & State University. The effects of methamphetamine on the reproductive system of male C57Bl/6J mice.

P2.21 MADELINE COLTHARP¹, BRITTANY SIMPSON¹, ABIR EL-ALFY², LAINY B. DAY¹. University of Mississippi Biology Department¹. University of Mississippi Pharmacology Department². Schizandrin effects on mice treated with Scopolamine in the Morris water maze.

P2.22 CORINA OLTEAN, HILLARY DOYLE, STEPHEN JETT, KAYLA FANN, BRENNA FINLAYSON, HEATHER IVESTER, CHUCK ROBERTSON, STEVEN LLOYD AND RYAN SHANKS. North Georgia College & State University. The effects of prenatal methamphetamine exposure on executive functions in adult C57Bl/6J mice.

P2.23 DAVID RODRIGUEZ AND JOSE BARBOSA. University of Tennessee at Chattanooga. Expression and Purification of Arabidopsis and Yeast gamma- Aminobutyrate transaminase (GABA-T). Challenges of Protein Purification Under Native and Denaturing Conditions Using Ni-NTA Resin.

P2.24 JANE HARTUNG AND VICTORIA TURGEON. Furman University. Understanding the secondary messenger pathway involved in PAR-1 activated apoptosis of motor neurons in developing chick embryos.

P2.25 LAUREN RICE AND VICTORIA TURGEON. Furman University. Cultured Schwann Cells Express the Protease-Activated Receptor-1 (PAR-1)

P2.26 SUNDE JONES AND KRISTIN SHIREY. Jacksonville State University. Effects of pH on the Developmental Toxicity of Pine Tree Extract to the Embryos of *Xenopus laevis*.

P2.27 TRACY HOOKS AND RICCARDO FIORILLO. The University of Louisiana at Monroe. Helminth community structure of western mosquitofish, *Gambusia affinis* from Bayou DeSiard in Northeast Louisiana.

P2.28 CHESTER JOYNER, JULI SERGI, AND DANA NAYDUCH. Dept. of Biology, Georgia Southern University. Effect of size, development and location on the prevalence of helminth parasites in Ranid tadpoles collected from isolated bodies of water in Bulloch County, GA.

P2.29 KODY CHASE AND RICCARDO FIORILLO. The University of Louisiana at Monroe. Prevalence and parasitemia of hemogregarines in Colubrid and Viperid snakes from Northeast Louisiana.

P2.30 LISA BROWN, NORA SMITH, AND RICCARDO FIORILLO. The University of Louisiana at Monroe. Helminth parasites of the Fowler's Toad, *Anaxyrus fowleri*, from Northeastern Louisiana.

P2.31 KATHRYN DOORNBOS, ERICA HENDERSON, SAJAL PATEL, AND ALAN F. SMITH. Department of Biology, Mercer University, Macon, GA 31207. Prevalence and distribution of the causative agent of Rocky Mountain Spotted Fever (*Rickettsia rickettsii*) in field-collected *Dermacentor variabilis* from the Great Smoky Mountain National Park, NC.

P2.32 RODERICK HILLI¹, SAMANTHA LEWIS¹, KIMBERLY BRAXTON², ANNE ZAJAC², DAVID S. LINDSAY², AND ALEXA C. ROSYPAL^{1,1}. Johnson C. Smith University, ²Virginia Tech. A survey of *Toxoplasma gondii* and *Trypanosoma cruzi* antibodies in dogs from Virginia.

P2.33 SHANESHA TRIPP¹, CHRISTOPHER KINLAW¹, R.N. SHARMA², D. STONE², J. P. DUBEY³, AND ALEXA ROSYPAL^{1,1}. Johnson C. Smith University, ²St. George's University, ³United States Department of Agriculture. Canine leishmaniasis and American trypanosomiasis in Grenada, West Indies: a seroprevalence survey in dogs.

P2.34 MICHAEL J. YABSLEY¹, ELLIS C. GREINER², FLORINA S. TSENG³, MICHAEL M. GARNER⁴, ROBERT W. NORDHAUSEN⁵, MICHAEL H. ZICCARDI⁶, DORI L. BORJESSON⁷, AND SHANON ZOBOLOTZKY⁷. ¹D.B. Warnell School of Forestry and Natural Resources and Southeastern Cooperative Wildlife Disease Study, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, Georgia 30602; ²Department of Infectious Diseases and Pathology, College of Veterinary Medicine, University of Florida, Gainesville, Florida 32610; ³Tufts Cummings School of Veterinary Medicine, North Grafton, Massachusetts 01536; ⁴Northwest ZooPath, 654 West Main, Monroe, Washington

98296; ⁵Electron Microscopy Laboratory, California Animal Heath and Food Safety Laboratory, Davis, California 95616; ⁶Wildlife Health Center, School of Veterinary Medicine, University of California, Davis, California 95616; ⁷Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, University of California, Davis, California 95616. Description of novel Babesia species and associated lesions from common murres (*Uria aalge*) from California.

P2.35 BRITTANY SIMPSON, BUCK TRAMEL, AND LAINY B. DAY. University of Mississippi. Comparison of Spatial Learning in CD1 and C57BL6 Mice Strains Using the Morris Water Maze

P2.36 CASSANDRA LORD AND DARWIN JORGENSEN. Roanoke College. Clearance of the bacterium, *Vibrio campbellii*, from the hemolymph in the American lobster, *Homarus americanus*.

P2.37 MICAH SPRUILL AND DARWIN JORGENSEN. Roanoke College, Va. Gill hemolymph velocity increases during exercise in the blue crab, *Callinectes sapidus*.

P2.38 VICTORIA BRINGS AND DARWIN JORGENSEN. Roanoke College. The functional interplay between the gill circulation and the ventilatory apparatus in the lobster: effect of exercise.

P2.39 DARLENE PRUITT, RACHEL FAIRHURST, RACHEL LIVINGSTON, ADAM POWELL, and NANCY EUFEMIA DALMAN. North Georgia College & State University, Dahlonega, Ga. Assessing Teratogenic effects of Recycled Tire Mulch Leachates on Frog Embryo Development.

P2.40 LINDSEY MINTON AND JAMES RAYBURN. Jacksonville State University, Biology Department. Preliminary histological evaluation of pine tree extract (from Virginia Pine, *Pinus virginiana*) on African Clawed Frogs (*Xenopus laevis*).

P2.41 ALYSSA TEAT and JONATHAN HORTON. University of North Carolina at Asheville. A survey of abiotic and physiological characteristics associated with ginsenoside content of *Panax quinquefolius*.

P2.42 JANET SCHIBLER AND LINDA NIEDZIELA. Elon University. Cardiovascular and Developmental Toxicity in *Danio rerio*, Zebrafish.

P2.43 KATHRYN STACKHOUSE AND LINDA NIEDZIELA. Elon University. Developmental Toxicity of TCDD in Zebrafish.

P2.44 CLARE MULREY AND DIANNE BAKER. University of Mary Washington. The effects of atrazine on gene expression of appetite-regulating neurohormones in zebrafish, *Danio rerio*.

P2.45 BRITTANY CARPENTER AND CLAIRE FULLER. Murray State University. The effect of temperature on immune system function in the Caribbean termite *Nasutitermes acajutlae* on St. John, US Virgin Islands.

P2.46 SARAH A. MAVEETY AND ROBERT A. BROWNE. Wake Forest University. Ground beetle (Coleoptera: Carabidae) diversity as related to elevation in Peruvian cloud forests.

P2.47 BRITTANY DELONG¹, JOSHUA W. CAMPBELL¹ SUSAN LOEB².
¹Shorter College. ² USDA Forest Service. Testing of two Malaise Traps used to Identify Chiropteran (Bats) Insect Diets.

P2.48 LINDA CANNING AND WILLIAM DEES. McNeese State University. Biometeorological investigations: Response of nocturnally-active mosquitoes to temperature and humidity in southwest Louisiana.

P2.49 A.J. BENNETT AND J.W. CAMPBELL. Shorter College. Terrestrial Invertebrates from Pettyjohns Cave: Does Soil Organic Matter Play a Role?

P2.50 VANESSA CAREY AND JOSHUA W. CAMPBELL. Macro-invertebrate Survey of Byers Cave, Georgia.

P2.51 WILLIAM DEES¹, LINDA CANNING¹, BENJAMIN CLARK¹, ERIN VRZAL², JULIE McCLURG², CATHERINE ZETTEL NALEN², LEE COHNSTAEDT² AND SANDRA ALLAN². McNeese State University¹, USDA/ARS Center for Medical, Agricultural and Veterinary Entomology². Undergraduate research in mosquito biology.

P2.52 WILLIAM DEES¹, GEORGE SCHULTZ², RICHARD ROBBINS², DAVID HILL² AND BENJAMIN CLARK¹. McNeese State University¹, Armed Forces Pest Management Board². Mosquito identification tools for entomology and health science courses.

P2.53 ANA M. LYONS¹, DIANE R. NELSON², AND PAUL J. BARTELS³.
¹Massachusetts Institute of Technology¹, East Tennessee State University², Warren Wilson College³. The effect of the insecticide imidacloprid on the leaf litter/soil tardigrade community in a hemlock woolly adelgid infested forest in the Great Smoky Mountains National Park, Tennessee.

P2.54 JAMIL GHAZAL AND FRANK A. ROMANO. Jacksonville State University. Preliminary results of a multiyear meiofauna survey of the northern Gulf of Mexico with emphasis on tardigrades.

P2.55 RACHEL FANCHER AND DEIRDRE GONSALVES-JACKSON. Virginia Wesleyan College. Elucidation of toxins from the nudibranch, *Doriopsilla pharpa*, from the Chesapeake Bay.

P2.56 ZAC NAPIER¹, DANIEL OSULA¹, WIL GILMORE¹, VICTOR R. TOWNSEND, JR.², DANIEL N. PROUD³, AND PETER A. VAN ZANDT¹. Birmingham-Southern College¹, Virginia Wesleyan College², University of Louisiana at Lafayette³. Costa Rican Harvestmen (Arachnida, Opiliones) Communities: Influences of Microhabitat Use and Rainforest Succession.

P2.57 DANIEL N. PROUD¹, BRUCE E. FELGENHAUER¹, AND VICTOR R. TOWNSEND, JR.². University of Louisiana at Lafayette¹, Virginia Wesleyan College². Intergeneric variation in genital morphology among Neotropical zalmoxid harvestmen (Arachnida, Opiliones) from Central America.

P2.58 HARRY MEYER AND JULIANA HINTON. McNeese State University. Water bears of the Caribbean.

P2.59 BRADY S. CHRISTENSEN¹, TRAVIS J. CROXALL¹, JAY A. YODER¹, DIANA SAMMATARO² AND GLORIA DeGRANDI-HOFFMAN². Wittenberg University¹, USDA-ARS, Carl Hayden

Honey Bee Research Center². Spraying fungicides reduces symbiotic microbes necessary for bee bread production.

P2.60 BRIAN Z. HEDGES¹, DAVID M. KOLAKOWSKI¹, JAY A. YODER¹, DIANA SAMMATARO² AND GLORIA DeGRANDI-HOFFMAN². Wittenberg University¹, USDA-ARS, Carl Hayden Honey Bee Research Center². Alteration of honey bee (*Apis mellifera*) colony nutritional source, "bee bread", in response to fungicide exposure.

P2.61 DERRICK J. HEYDINGER¹, MICHAEL R. CONDON¹, JAY A. YODER¹, DIANA SAMMATARO² AND GLORIA DeGRANDI-HOFFMAN². Wittenberg University¹, USDA-ARS, Carl Hayden Honey Bee Research Center². Commercially applied antibiotics are ineffective against honey bee diseases chalkbrood and stonebrood.

P2.62 MYLES K. HILL AND STEPHEN C. LANDERS. Troy University, Troy AL. Kinorhyncha, Priapulida, and Loricifera from the northern Gulf of Mexico.

P2.63 JUSTIN SHAFER, JOHN HOLSINGER, LYNNETTE MEADOR and GRACE SCHULTE. Old Dominion University. GIS analyses of habitat, range and species group characteristics of the amphipod genus *Stygobromus*.

P2.64 DAYNA COOK¹, CATHRYN WILSON¹, DANIEL N. PROUD², AND VICTOR R. TOWNSEND, JR.¹. Virginia Wesleyan College¹, University of Louisiana at Lafayette². Comparative study of genital morphology in Neotropical cosmetid harvestmen from Central America and the Caribbean.

P2.65 VICTOR R. TOWNSEND, JR.¹ AND DANIEL N. PROUD². Virginia Wesleyan College¹, University of Louisiana at Lafayette². Genital morphology of harvestmen (Arachnida, Opiliones) from Trinidad, West Indies.

P2.66 ROBERT WAYNE VAN DEVENDER¹ AND AMY S. VAN DEVENDER². Appalachian State University¹, 797 Little Laurel Road Extension, Boone, NC². Land Snails of North Carolina. Part 1. Small Species with High Spires. The Carychiidae, Cionellidae, Pomatiopsidae, and Pupillidae of North Carolina.

P2.67 DANIEL A. DOUGLAS¹, RONALD S. CALDWELL², AND JOHN E. COPELAND². Eastern Kentucky University¹, Lincoln Memorial University². The Land Mollusca of Norris Dam State Park, Tennessee with notes on Cumberland Plateau and Blue Ridge Affinities.

Friday Morning, April 9

9:30-11:30 BBB Poster Presentations

10:00-11:00 **ASB Posters II:** Presenters (odd numbered posters) must be present

8:00-11:00 Oral Presentations

8:00-11:30 Southeastern Society of Parasitologists

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| 8:00-11:00 | O11: | Aquatic Biology I |
| 8:00-8:15 | O11.1 | CALEB D. MCMAHAN ¹ , JASON S. BROACH ² , AND KYLE R. PILLER ¹ . Department of Biological Sciences, Southeastern Louisiana University ¹ , School of Forest Resources & Conservation-Fisheries and Aquatic Sciences, University of Florida ² . Mullet Mayhem: A taxonomic and systematic review of Southeastern US Mullets. |
| 8:15-8:30 | O11.2 | SIRISHA BETHALA, JAMIE McDANIEL; JIANGQUAN ZHU; MAHMOUD HAYTHAM ALAMI; JANET GASTON; AND NEIL BILLINGTON. Troy University. Population genetic variation in sauger and walleye. |
| 8:30-8:45 | O11.3 | GEORGE R. CLINE, JAMES R. RAYBURN, FRANK A. ROMANO III, KELLY D. GREGG, AND ROBERT E. CARTER Jr., Jacksonville State University. Analysis of Fish Communities: Results from Student Observations. |
| 8:45-9:00 | O11.4 | SHANNON WHITE ¹ , JOSH HARRIS ¹ , CHARLES GOWAN ¹ , AND KURT FAUSCH ² . Randolph-Macon College ¹ , Colorado State University ² . Demographic responses of trout populations two decades after habitat manipulation in five Colorado streams. |
| 9:00-9:15 | O11.5 | REBECCA E. HALE ¹ AND JOSEPH TRAVIS ² . University of North Carolina Asheville ¹ . Florida State University ² . Lack of abiotic effect supports hypothesis that differences in life histories of least killifish, <i>Heterandria formosa</i> , are due to local adaptation. |
| 9:15-9:30 | O11.6 | MARK MEADE, GREG SCULL, AND JOSH TURNER. Jacksonville State University. Fish assemblages in Choccolocco Creek and its tributaries, Calhoun County AL. |
| 9:30-9:45 | O11.7 | KATELYN B. SHANK AND WERNER WIELAND. Dept. of Biological Sciences, Univ. of Mary Washington. A preliminary survey of the fishes of the upper Rappahannock River, VA post dam removal. |
| 9:45-10:00 | O11.8 | GREGORY SCULL, JONATHAN ADAMS, MARK MEADE AND JOSHUA TURNER. Jacksonville State University. An Index of Biotic Integrity for the Shoal Creek Drainage, Calhoun and Cleburne Counties, Alabama, utilizing Fish Assemblage Assessment. |
| 10:00-10:30 Break | | |
| 10:30-10:45 | O11.9 | NICHOLAS COOKSON ¹ AND MARK S. SCHORR ² . City of Chattanooga, Department of Public Works, Stormwater Management Section ¹ , University of Tennessee at Chattanooga, Department of Biological and Environmental Sciences ² . Correlations of watershed housing density with environmental conditions and fish assemblages in a Tennessee Ridge and Valley stream. |

10:45-11:00 O11.10 CHISOM J. ONYEUKU¹, J. EVAN MUSSELWHITE¹, SANDRA K. WHEELER², AND DENNIS C. HANEY¹. Departments of Biology¹ and Chemistry², Furman University. Investigating the chemical effects of historical cotton farming on bacterial and fish communities in rural piedmont streams of South Carolina.

8:30-11:00 O12: Plant Systematics III

8:30-8:45 O12.1 NORMAN DOUGLAS¹, WADE WALL¹, QUI-YUN (JENNY) XIANG¹, WILLIAM HOFFMANN¹, THOMAS WENTWORTH¹, JANET GRAY², AND MATTHEW HOLMANN³. Department of Plant Biology, North Carolina State University, Raleigh, NC 27695¹, Endangered Species Branch, Fort Bragg, North Carolina², US Army Corps of Engineers, Construction Engineering Research Laboratory³. Origin and relationship of the rare plant, *Lilium pyrophilum*, to other southeastern pendent lilies.

8:45-9:00 O12.2 EMILY GILLESPIE AND KATHLEEN KRON. Wake Forest University. Challenges and strategies in phylogeny reconstruction: A case study in the Ericaceae.

9:00-9:15 O12.3 WENDY B. ZOMLEFER AND DAVID E. GIANNASI. University of Georgia. National Parks: The importance of vouchered floristic surveys.

9:15-9:30 O12.4 PATRICK LYNCH AND WENDY B. ZOMLEFER. University of Georgia. Floristic inventory and vegetation analysis of the South Atlantic Coastal Plain limestone forest.

9:30-9:45 O12.5 ELAINE DURCHHOLZ, MALLORY WILLIAMS, AND E. ANN POWELL. University of Evansville, Evansville, IN, 47722. Evolutionary relationships of the North American blueberries (*Vaccinium*, Ericaceae).

9:45-10:00 O12.6 BRUCE K. KIRCHOFF, ROXANNE LEGGETT, VA HER, CHUE MOUA, JESSICA MORRISON, CHAMIKA POOLE. Department of Biology, University of North Carolina at Greensboro, Greensboro, NC 27402. New principles of visual keys illustrated through a visual key to the Fagaceae of the southeast.

10:00-10:30 Break

10:30-10:45 O12.7 DWAYNE ESTES¹ AND JAMES BECK². Austin Peay State University's Center for Field Biology¹, Duke University². A new species of *Polymnia* (Asteraceae: Polymnieae) from the Sequatchie Valley of Tennessee.

10:45-11:00 O12.8 COURTNEY GORMAN, MATT BRUTON, AND DWAYNE ESTES. Austin Peay State University's Center for Field Biology. *Macrothelypteris torresiana* (Thelypteridaceae) new to Kentucky, with an update of its continued expansion in the United States.

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| 8:30-11:00 | O13: | Ecology – Community Dynamics |
| 8:30-8:45 | O13.1 | SARAH GALLIHER AND DAVID VANDERMAST. Elon University. Effects of beech mortality due to beech bark disease on spring ephemerals in Great Smoky Mountains National Park. |
| 8:45-9:00 | O13.2 | EVAN ESKEW ¹ , ALICIA KRAWCZAK ² AND STEVEN WHITFIELD ³ Davidson College ¹ , Vanderbilt University ² , Florida International University ³ Responses of terrestrial herpetofauna to secondary forest regeneration at La Selva Biological Station, Costa Rica |
| 9:00-9:15 | O13.3 | DAVID VANDERMAST. Elon University. Twenty-four years (1985-2009) of demographic changes in the high-elevation beech forests of Great Smoky Mountains National Park. |
| 9:15-9:30 | O13.4 | NEIL PEDERSON ¹ a, KACIE TACKETT ¹ , RYAN MCEWAN ² , ADRIENNE COOPER ¹ , STACY CLARK ³ , UYANGA ARIYA ⁴ , CAROLINE LELAND ¹ , NATHAN MALCOMB ¹ , GLADE BROSI ⁵ , RAY EATON ¹ , R. DREW STOCKWELL ¹ . Eastern Kentucky University ¹ , University of Dayton ² , USDAForest Service - Southern Research Station ³ , National University of Mongolia ⁴ , University of Kentucky ⁵ . Prospects for reconstructing drought using nonclassical dendroclimatological data. |
| 9:30-9:45 | O13.5 | BENJAMIN O. KNAPP ^{1, 2} , HUIFENG HU ¹ , JOAN L. WALKER ² , AND G. GEOFF WANG ¹ . Clemson University ¹ , USDA Forest Service ² . Restoration of native grass species following harvesting treatments at Fort Benning, GA and Camp Lejeune, NC. |
| 9:45-10:00 | O13.6 | KATIE L. BURKE. University of Virginia. American chestnut (<i>Castanea dentata</i>) persistence and niche change in Southwestern Virginia eighty years after chestnut blight (<i>Cryphonectria parasitica</i>)introduction. |
| 10:00-10:30 Break | | |
| 10:30-10:45 | O13.7 | ALEX FOTIS AND JOYDEEP BHATTACHARJEE. University of Louisiana at Monroe. Modeling delayed succession in a bottomland hardwood forest after twenty-one years of natural succession. |
| 10:45-11:00 | O13.8 | JACQUELINE M. WHITE AND ROBERT K. PEET. University of North Carolina at Chapel Hill. Spatial and temporal dynamics of tree seedlings in floodplain forests of the lower Roanoke River, North Carolina. |
| 8:00-11:00 | O14: | Diversity and Conservation I |
| 8:00-8:15 | O14.1 | NEIL GIFFEN ¹ AND SCOTT REASOR ² . Oak Ridge National Laboratory: Environmental Sciences Division ¹ , Oak Ridge National Research Park ² . Reptile and |

Amphibian Abundance and Distribution Survey Oak Ridge National Environmental Research Park.
HARRY A. MEYER, BRAD PEET, AND JULIANA HINTON. McNeese State University. First report of terrestrial tardigrades from the Atlantic island of Bermuda.

8:30-8:45 O14.3 DANIEL A. DOUGLAS, DAVID BROWN, AND NEIL PEDERSON. Eastern Kentucky University. Land snails as indicators of old growth forests.

8:45-9:00 O14.4 SCOTT P. JONES AND THOMAS K. PAULEY. Department of Biology, Marshall University, Huntington, WV 25755, USA¹. Urban Herpetology in and around Huntington, West Virginia.

9:00-9:15 O14.5 JOHN TAGGART. University of North Carolina at Wilmington. Floristics and stewardship of Sandy Run Savannas State Natural Area, North Carolina.

9:15-9:30 O14.6 R. STALTER¹, B. DREXLER² AND A. BRUNSON³. St. John's University. Vascular Plant Species Richness In Four Northeastern Cities.

9:30-9:45 O14.7 TERRY BOYER AND ROBERT CARTER¹. Department of Biology, Jacksonville State University¹. Community analysis of green pitcher plant (*Sarracenia oreophila*) bogs in Alabama.

9:45-10:00 O14.8 ROBERT CARTER AND ROBERT FLOYD. Department of Biology, Jacksonville State University. Plant community analysis of the Pine Mountain Region of west-central Georgia.

10:00-10:30 Break

10:30-10:45 O14.9 WILLIAM A. MCAVOY¹, WESLEY M. KNAPP², AND LANCE T. BIECHELE. Delaware Natural Heritage and Endangered Species Program¹, Maryland Natural Heritage Program². The Liverworts and Hornworts of the Delmarva Peninsula's Atlantic Coastal Plain.

10:45-11:00 O14.10 KIMBERLY NORTON AND DWAYNE ESTES. Austin Peay State University. A preliminary evaluation of the flora and vegetation of seasonally wet limestone cedar glades of the southeastern United States.

8:15-11:00 O15: Wetlands

8:15-8:30 O15.1 PUJA SHRESTHA, NEIL BILLINGTON, AND M. WAYNE MORRIS. Troy University. Genetic variation in bald cypress and pond cypress populations from southeastern Alabama.

8:30-8:45 O15.2 CLIFF R. HUPP¹, AARON R. PIERCE², AND GREGORY B. NOE¹. U.S. Geological Survey¹, Nicholls State University². Floodplain geomorphic processes, equilibrium, and environmental impacts of human alterations along Coastal Plain rivers, USA.

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| 8:45-9:00 | O15.3 | HERMAN W. HUDSON III AND ROBERT B. ATKINSON. Christopher Newport University. The effect of adjacent forests on colonizing tree density in restored wetland mitigation sites in Virginia. |
| 9:00-9:15 | O15.4 | MATTHEW SEMCHESKI, HAROLD G. MARSHALL, AND KNEELAND NESIUS. Old Dominion University. Seasonal patterns of microphytobenthic potential primary production in the lower chesapeake bay and its associated tributaries. |
| 9:15-9:30 | O15.5 | DIANE DE STEVEN. U.S. Forest Service Southern Research Station. Wetland restoration practices in South Carolina's Wetlands Reserve Program. |
| 9:30-9:45 | O15.6 | JAMIE A. DUBERSTEIN ¹ , KEN W. KRAUSS ² , AND WILLIAM H. CONNER ¹ . Clemson University ¹ , U.S. Geological Survey, National Wetlands Research Center ² . Physiological and growth differences of mature baldcypress trees in relation to salinity in "freshwater" tidal swamps undergoing persistent drought. |
| 9:45-10:00 | O15.7 | JESSICA M. CAMPO AND ROBERT B. ATKINSON. Center for Wetland Conservation at Christopher Newport University. Review and analysis of floristic quality using data mined from the monitoring reports of twelve wetland mitigation bank sites in Virginia. |

10:00-10:30 Break

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| 10:30-10:45 | O15.8 | WILLIAM DEGRAVELLES ¹ AND WILLIAM H. CONNER ^{1,2} . Clemson University ¹ . Clemson University Baruch Institute of Coastal Ecology and Forest Science ² . The effects of artificial canopy gap creation on baldcypress (<i>Taxodium distichum</i> L.) sapling growth in a North Carolina swamp: Initial response. |
| 10:45-11:00 | O15.9 | HENRY SPRATT ¹ , INIGO HOWLETT ¹ , AND GREG BRODIE ² . University of Tennessee at Chattanooga ¹ , Tennessee Valley Authority ² . Microbial processes occurring in a constructed wetland treating acidic seep waters at the Tennessee Valley Authority, Widows Creek Fossil Plant, Stevenson, Alabama. |

Friday Afternoon, April 9**2:00-4:00 Mollusk Initiative**

2:30-3:30 ASB Posters II: Presenters (even numbered posters) must be present

1:30-5:30 Oral Presentations

1:30-5:30 S2: **Conservation in western North Carolina.** Organized by Gary Wein (Highlands-Cashiers Land Trust)

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| 1:30-1:45 | S2.1 | GARY WEIN. Highlands-Cashiers Land Trust. The elements of conservation in Western North Carolina. |
| 1:45-2:15 | S2.2 | PHYLLIS STILES. Blue Ridge Forever. Blue Ridge Forever: A coalition of land trusts. |
| 2:15-2:30 | S2.3 | RICHARD ROGERS. North Carolina's Clean Water Management Trust Fund. Clean Water Management Trust Fund - Protecting, Restoring and Enhancing Water Quality in North Carolina. |
| 2:30-3:00 | S2.4 | EDWARD SCHWARTZMAN. North Carolina Natural Heritage Program. The North Carolina Natural Heritage Program: Inventory and conservation priorities in Macon County. |

3:00-3:30 Break

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| 3:30-4:00 | S2.5 | KENDRICK C. WEEKS. North Carolina Wildlife Resources Commission. North Carolina Wildlife Action Plan: Wildlife conservation strategies. |
| 4:00-4:30 | S2.6 | LORI A. WILLIAMS. North Carolina Wildlife Resources Commission. Conservation of the green salamander (<i>Aneides aeneus</i>). |
| 4:30-5:00 | S2.7 | CHRIS KELLY. North Carolina Wildlife Resources Commission. Conservation of the endangered Carolina northern flying squirrel in North Carolina. |
| 5:00-5:30 | S2.8 | DAVID TUCH. Equinox Environmental Consultation & Design, Inc. Conservation-based development in Western North Carolina. |

1:30-5:30 O16: Aquatic Biology II

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| 1:30-1:45 | O16.1 | MEGAN RAMSEY. Piedmont College. The Effect of Aquatic pH on the Survivability of a Macroinvertebrate Shredder, <i>Hyalella azteca</i> . |
| 1:45-2:00 | O16.2 | MATTHEW P. TRUMP AND RONALD V. DIMOCK, JR. Wake Forest University. Feeding morphology of juvenile <i>Utterbackia imbecillis</i> . |
| 2:00-2:15 | O16.3 | SUSAN SEWELL ¹ , MARK MEADE ² , AND FRANK ROMANO ² . Gadsden State Community College ¹ , Jacksonville State University ² . Metabolic rates of an aquatic tardigrade, <i>Dactylobiota cf ambiguus</i> . |
| 2:15-2:30 | O16.4 | JOHN McCREADIE AND CHRIS BEDWELL. University of South Alabama. Is competition evident in small, low gradient southern coastal streams? |
| 2:30-2:45 | O16.5 | MAGHAN WOODS AND MATTHEW WATERS. Shorter College. Rome, GA. Evidence of multiple trophic state changes in the paleolimnological history of Lake Apopka, FL. |
| 2:45-3:00 | O16.7 | SUSIE BARRETT, MATTHEW WATERS, JOSHUA CAMPBELL, AND MAGHAN WOODS. Shorter College. Rome, GA. Recent paleolimnological history of primary producer assemblages in Okefenokee wetland system. |

3:00-3:30 Break

3:30-3:45 O16.8 NATALIE A. AMOROSO AND DAVID R. CHALCRAFT. East Carolina University. Dragonfly colonization history alters insect biodiversity within ephemeral ponds

3:45-4:00 O16.9 MATTHEW MULLER AND DEBORAH WALLER. Old Dominion University. Survey of Odonate naiad populations and relationship to water quality of freshwater lakes in Lower Hampton Roads, Virginia.

4:00-4:30 O16.10 MEGAN WHITE, ERIK JOHNSON, AND RONALD DIMOCK, JR. Wake Forest University. Using freshwater mussels as biological indicators: The physiological responses of *Utterbackia imbecillis* (Bivalvia: Unionidae) to copper exposure.

4:34-4:45 O16.11 CAROLINE E. ROONEY¹, THOMAS H. MARTIN¹, STEVE J. FRALEY² AND WILLIAM T. RUSS². Western Carolina University¹, North Carolina Wildlife Resources Commission². In-situ feasibility study of freshwater mussel reintroduction: survival and growth of the wavy-rayed lamp mussel (*Lampsilis fasciata*) in the Pigeon River, NC

4:45-5:00 O16.12 ERIN E. SINGER AND MICHAEL M. GANGLOFF. Appalachian State University. Mill dam effects on freshwater mussels in an Alabama stream.

5:00-5:15 O16.13 JOHN HAINS, JESSIE ULMER, CHRISTINA DARLING, DAMON FLOWERS, CRAIG HOSSENLOPP, STEPHANIE WILLETT, IRIS REDWOODSAWYERR, KRISTINE GRIFFIN, AND CARL DIXON. Clemson University. The Invasion and Behavior of *Bellamya japonica* (von Martens 1861), a New Invasive Snail to the Savannah River Basin.

5:15-5:30 O16.14 PATIA M. CONNELL AND DAVID R. CHALCRAFT. East Carolina University. Native rather than introduced species of crayfish have stronger per capita effects on *Bufo fowleri* tadpoles.

1:30-5:15 O17: Evolutionary Biology, Genetics, and Variation

1:30-1:45 O17.1 TRAVIS PERRY AND MEGAN PITMAN. Clemson University. Developing a cost effective census tool for puma (*Puma concolor*) using remote camera detection probabilities.

1:45-2:00 O17.2 JENNIFER CARMAN, JEREMY HYMAN. Western Carolina University. Investigating morphological variation in song sparrows (*Melospiza melodia*): a preliminary study.

2:00-2:15 O17.3 TIMOTHY WHITESIDE II AND CHRISTINE FLEET. Emory & Henry College. Understanding the *fis* gene's effect on the gibberellic acid pathway in *Arabidopsis thaliana*.

2:15-2:30 O17.4 SARAH PATE AND ZACK MURRELL. Appalachian State University. Phylogeography of the threatened *Spiraea virginiana* Britton.

2:30-2:45 O17.5 ELIZABETH MIHALCIK¹, MALIK HAYNES², AND FRED THOMPSON³. Albany State University¹, Florida A&M University², Florida Museum of Natural History³. Distribution of the tree snail species in the Florida Keys with special consideration to *Orthalicus reses reses*.

2:45-3:00 O17.6 JACQUELYN S. HOWELL¹ AND ASHLEY B. MORRIS². University of South Alabama. Species distribution and hybridization of *Sarracenia* at Splinter Hill Bog Preserve.

3:00-3:30 Break

3:45-4:00 O17.7 WHITNEY KISTLER^{1,2}, MICHAEL YABSLEY^{1,2}, DAVID STALKNECT², THOMAS J. DELIBERTO³, KYLE VAN WHY³, PAUL C. WOLF³, DARREN L. BRUNING³, JAMES C. CUMBEE³, RANDALL M. MICKLEY³, CARL W. BETSILL³. ¹Daniel B. Warnell School of Forestry and Natural Resources, University of Georgia, ²College of Veterinary Medicine, University of Georgia, ³National Wildlife Disease Program, Fort Collins, Colorado. Evaluation of Canada geese (*Branta canadensis*) as sentinels for detecting local transmission of avian influenza virus.

4:00-4:30 O17.8 WADE WALL¹, NORMAN DOUGLAS¹, QIU-YUN (JENNY) XIANG¹, WILLIAM HOFFMANN¹, THOMAS WENTWORTH¹, JANET GRAY², AND MATTHEW HOHMANN³. Department of Plant Biology, North Carolina State University, Raleigh, NC¹, Endangered Species Branch, Fort Bragg, North Carolina², US Army Corps of Engineers, Construction Engineering Research Laboratory³. No evidence for southern refugium during the latter Pleistocene in *Pyxidanthera barbulata*.

4:34-4:45 O17.9 JAMES S. BARDSLEY¹, ROLAND P. ROBERTS¹, LARRY WIMMERS¹, ANDRE WELLS¹, SARA CAMPBELL¹, OLAJEJUMADE ADEGBENRO¹, KARIMAT OKANLAWON¹, ASHLEE PHILYAW¹, DARIN A.SUKHA², DAVID R.BUTLER², FRANCES L.BEKELE², SARAH BHARATH² AND JAMES A.SAUNDERS¹. Towson University Department of Biological Sciences 8000 York Road, Towson, MD 21252-0001¹. University of West Indies Cocoa Research Unit, St Augustine, Trinidad and Tobago, West Indies² Detection of Misidentified Plants in the International Cocoa Genebank, Trinidad.

4:45-5:00 O17.10 CHRISTIAN JOHNSON AND JENNIFER RHODE WARD. University of North Carolina at Asheville. Morphological change in *Piriqueta cistoides caroliniana* (Morning Buttercup) leaves under different moisture extremes.

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| 5:00-5:15 | O17.11 | CARRIE WELLS, PETER MARKO, PETER ADLER, DAVID HECKEL, AND DAVID TONKYN. Clemson University. Range collapse in the threatened butterfly, <i>Speyeria diana</i> . |
| 1:30-5:15 | O18: | Teaching Biology |
| 1:30-1:45 | O18.1 | WELCH, NICOLE TURRILL. Mississippi University for Women. Where oh where has the carbon gone? Student misconceptions of carbon dynamics contribute to their inadequate understanding of global climate change. |
| 1:45-2:00 | O18.2 | STEPHANIE JEFFRIES. Duke University. What can first-year college students teach us about rare plants? Designing academic writing classes that contribute to conservation through service learning. |
| 2:00-2:15 | O18.3 | C. BRIAN ODOM. Wingate University. A “No-Cost” bioinformatics laboratory exercise for non-major biology courses. |
| 2:15-2:30 | O18.4 | PEARL R. FERNANDES. University of South Carolina Sumter. Engaging Students in Proactive Citizenship. |
| 2:30-2:45 | O18.5 | BETH ANNE PAULEY. Marshall University and University of Charleston. Science education and the case for online instruction. |
| 2:45-3:00 | O18.6 | DARLENE PANVINI. Belmont University, Nashville, TN. Smuggled! An Environmental CSI Lab Investigation. |
| 3:00-3:30 Break | | |
| 3:30-3:45 | O18.7 | ROGER SAUTERER. Jacksonville State University. From backwater to center stage: Using electronegativity as a central concept for understanding chemical principles in introductory biology courses. |
| 3:45-4:00 | O18.8 | ROGER SAUTERER Jacksonville State University. Integration of earth history and paleobiolgoy into introductory biology courses as a tool for understanding biological diversity and evolutionary principles. |
| 4:00-4:30 | O18.9 | BRUCE K. KIRCHOFF, MARGARET HORTON. Department of Biology, University of North Carolina at Greensboro, Greensboro, NC 274021. Teaching plant identification through effective homework. |
| 4:34-4:45 | O18.10 | VAHE OHANYAN AND BRIAN C. McCARTHY. Ohio University. Integrating software applications for the study of ecoinfoformatics. |
| 4:45-5:00 | O18.11 | LINDSAY WALKER AND DARLENE PANVINI. Belmont University. An examination of closed system compost maturity using three different starting materials: mature compost, soil, and commercial compost starter. |
| 5:00-5:15 | O18.12 | WILLIAM DEES ¹ , TERRY SYLVESTER ¹ , BENJAMIN CLARK ¹ , LILNDA CANNING ¹ , AARON FIGUEROA ¹ , RICHARD HOPES ¹ , AND DANIEL KLINE ² . McNeese State University ¹ , USDA/ARS Center for Medical, |

Agricultural and Veterinary Entomology². "Simple-to-build" equipment for laboratory and field mosquito investigations.

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| 1:30-5:30 | O19: | Diversity and Conservation II |
| 1:30-1:45 | O19.1 | JOHN R. EVANS AND JOEY SHAW. University of Tennessee at Chattanooga. A preliminary flora of the Sequatchie Valley in Sequatchie County, Tennessee. |
| 1:45-2:00 | O19.2 | GERALD WOODWORTH AND JOEY SHAW. University of Tennessee at Chattanooga. Establishment of Permanent Plots and Analysis of Woody Vegetation in the Tennessee River Gorge, Marion and Hamilton Counties, TN. |
| 2:00-2:15 | O19.3 | EMILY BLYVEIS AND JOEY SHAW. University of Tennessee at Chattanooga. A preliminary flora of the Tennessee River Gorge, Hamilton and Marion counties, Tennessee. |
| 2:15-2:30 | O19.4 | GEORGE CLINE, SAM SUTTLE, AND ROBERT CARTER. Jacksonville State University. Analysis of southeastern herpetological communities: Lizards and turtles. |
| 2:30-2:45 | O19.5 | DAVID BROWN AND TODD WEINKAK. Eastern Kentucky University. Bird communities of hemlock forests in Kentucky. |
| 2:45-3:00 | O19.6 | BRETT MACEK, GEORGE CLINE, AND ROBERT CARTER. Jacksonville State University. Analysis of southeastern herpetological communities: Frogs and salamanders. |
| 3:00-3:15 Break | | |
| 3:15-3:30 | O19.7 | DOSHIE SMITH AND LISA KELLY. University of North Carolina at Pembroke. Population Demographics of Woody Goldenrod (<i>Chrysoma pauciflosculosa</i>) in Lumber River State Park, North Carolina. |
| 3:30-3:45 | O19.8 | ROBERT D. TOMPKINS ¹ , WILLIAM C. STRINGER ² , KEITH RICHARDSON ³ , ELENA A. MIKHAILOVA ⁴ , WILLIAM C. BRIDGES, Jr. ⁵ Belmont Abbey College ¹ , Clemson University ² , Belmont Abbey College ³ , Clemson University ⁴ , Clemson University ⁵ Big bluestem (<i>Andropogon gerardii</i> ; Poaceae) communities in the Carolinas: Composition and ecological factors |
| 3:45-4:00 | O19.9 | TIMOTHY BALDWIN ¹ AND YONG WANG ¹ . Alabama A&M University ¹ . Relationship of pool breeding amphibian diversity and local and landscape forest cover around temporary wetlands in northern Alabama |
| 4:00-4:30 | O19.10 | KRISTEN M. KOSTELNIK ¹ , THOMAS R. WENTWORTH ¹ , JANET B. GRAY ² , AND MATTHEW R. HOHMANN ³ . North Carolina State University ¹ , US Army – Fort Bragg Military Reservation – Endangered Species |

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| | | Branch ² , US Army Corps of Engineers – Construction Engineering Research Laboratory ³ . Interpretation of extinction risk for rare species can be influenced by the choice of model used to characterize population states. |
| 4:34-4:45 | O19.11 | ALLEN C. RISK. Morehead State University. Plant biodiversity surrogacy: a case study from a sandstone gorge ecosystem in eastern Kentucky. |
| 4:45-5:00 | O19.12 | ALLEN C. RISK. Morehead State University. The partitioning of vascular plant diversity in a sandstone gorge in eastern Kentucky: a mesohabitat approach. |
| 5:00-5:15 | O19.13 | DANIELLE PATTERSON ¹ and BETSY WILSON ² . The University of North Carolina at Asheville ¹ . Soil microbial diversity of a riparian eastern hemlock (<i>Tsuga canadensis</i> (L.) Carr.) as revealed by 16 S rDNA clone library. |
| 5:15-5:30 | O19.14 | PAUL SUPER ¹ , KEITH LANGDON ² , NANCY FINLEY ² , ROB KLEIN ² , MATT KULP ² , KRISTINE JOHNSON ² , STEVEN MOORE ² , BECKY NICHOLS ² , JIM RENFRO ² , JANET ROCK ² , SUSAN SIMPSON ² , BILL STIVER ² , AND GLENN TAYLOR ² . Appalachian Highlands Science Learning Center, NPS ¹ , Great Smoky Mountains National Park, NPS. ² Ecosystem monitoring in the southern Appalachians: revisiting long-term monitoring in Great Smoky Mountains National Park and related research. |
| 2:00-5:30 | O20: | Ecology – Behavior |
| 2:00-2:15 | O20.1 | J. KYLE BOUDREAU. Western Carolina University. Correlates of aggression: The interplay between testosterone, boldness, and territoriality in male song sparrows, <i>Melospiza melodia</i> , in urban and rural habitats |
| 2:15-2:30 | O20.2 | JACKSON EVANS AND JEREMY HYMAN. Western Carolina University. An examination of the influence of social information on territory selection by nonmigratory song sparrows (<i>Melospiza melodia</i>). |
| 2:30-2:45 | O20.3 | LOUISE PEPPE AND GARY RITCHISON. Eastern Kentucky University ¹ . Why Twitter? Vocalizations and Displays of Chimney Swifts. |
| 2:45-3:00 | O20.4 | MEREDITH CARROLL. Western Carolina University. The use of urban and rural habitats by migrating and residential Song sparrows (<i>Melospiza melodia</i>) in western North Carolina. |
| 3:00-3:30 | Break | |
| 3:45-4:00 | O20.5 | NICOLE BARRIOS AND LYNN SIEFFERMAN. Appalachian State University. The Effects of Habitat and Nestling Quality on Nest Defense Behaviors of Male and Female Eastern Bluebirds (<i>Sialia sialis</i>). |

4:00-4:30 O20.6 WINTERS, CARLY, ALLISON ROLLINS, AND JENNIFER ZETTLER. Armstrong Atlantic State University. Behavioral interactions between antlions (Neuroptera: Myrmeleontidae) and four species of ant (Hymenoptera: Formicidae).

4:34-4:45 O20.7 YUANFEI QUAN¹, EILEEN LACEY², LUIS EBENSPERGER³ AND LOREN HAYES¹. University of Louisiana at Monroe¹, University of California, Berkeley², Pontificia Universidad Católica de Chile³. Estimate of fitness consequence of group living in the degu, *Octodon degus*, with Microsatellite.

4:45-5:00 O20.8 MONICA STEWART¹, LOREN DONALD HAYES¹ AND MAURICIO SOTO GAMBOA². University of Louisiana at Monroe¹, Universidad de Chile, Valdivia, Chile². Intraspecific variation in alarm calls of a social subterranean rodent, *Spalacopus cyanus*.

5:00-5:15 O20.9 JEREMY HYMAN¹, JACKSON EVANS¹, KYLE BOUDREAU¹, JENNIFER SCALES², AND MELISSA HUGHES². Western Carolina University¹, College of Charleston². Causes and consequences of variation in territorial aggression in the song sparrow, *Melospiza melodia*.

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The Stillwell Science Building where the Departments of Biology, Chemistry, Physics, Environmental Science, Geosciences, and Natural Resource Conservation and Management are housed at Western Carolina University, Cullowhee, North Carolina.

ASB 2010 Field Trips

Asheville, North Carolina, is cradled in a lush green bowl anchored by 5,721-foot Mount Pisgah and surrounded on all sides by the Appalachian Mountains. Wednesday afternoon, April 7, and Saturday, April 10, field trips will highlight the "Appalachian Spring." Trips are from several hours to a half-day in length and will involve caravans. All trips will begin from the check-in area at the conference site in Asheville at the start time listed. Trip end times are the times you could expect to be back in Asheville. One-way participation (without a return to Asheville) is OK. Meals and snacks will be on your own; bring whatever food and water you will need. Field trip updates and contact information can be found at the 2010 meeting link (<http://www.asb.appstate.edu/meeting.php>) on the ASB website or directly at <http://paws.wcu.edu/gadkison/asb2010/>.

1. **Botanical Diversity Field Trip, *The Botanical Gardens at Asheville*.** Wednesday, time TBA. Trip Leader: Jay Krancheck. Strolling through this collection of plants native to the Southern Appalachian Mountains, you will learn about this area's natural history, floras, and community delineation, and visit examples of some unique natural communities including a rock outcrop and bog.
2. **Cataloochee Valley Elk Viewing, *Great Smoky Mountains National Park, NC*.** Wednesday, 4:00-7:30 pm. Trip Leader: Joe Yarkovich, NPS. Elk once roamed the southern Appalachian Mountains until they were eliminated from the region by over-hunting and loss of habitat. The experimental release of elk into Great Smoky Mountains National Park began in 2001. During this trip, you will hear a presentation on the elk reintroduction, as well as black bear management, and wild hog control in the park. Binoculars for elk viewing recommended. Maximum of 20 participants.
3. **Ecology and Management of Southern Appalachian Hardwood Forest: A Research Perspective, *Bent Creek Experimental Forest, Asheville, NC*.** Wednesday, 1:00-5:00 pm. Trip leaders: Cathryn Greenberg, Henry McNab, Tara Keyser, David Loftis. Participants will get an overview of the ecology of southern Appalachian hardwood forest ecosystems and learn about the research program in ecology and silviculture at the Bent Creek Experimental Forest. The group will learn how forest composition changes over moisture and fertility gradients. They will also view a demonstration of different forest management practices and learn how each affects forest regeneration, wildlife, and forest food resources such as fleshy fruit and hard mast.
4. **Birding at Beaverlake Bird Sanctuary, *Asheville, NC*.** Saturday, 7:30 am-11:30 am. Trip Leader: Marilyn Westphal, Kitty Reynolds, UNCA. Owned and operated by the Elisha Mitchell Audubon Society, Beaverlake was scheduled to be a strip mall until the local Audubon chapter and nearby homeowners bought the property and turned it into a bird sanctuary. We will look for early spring migrants, including the white-throated sparrow and yellow-throated warbler. Easy, level walking. Comfortable shoes and binoculars are strongly recommended. Maximum of 20 participants.

5. **Management and Science in Great Smoky Mountains National Park, NC.** Saturday, 8:30 am-2:30 pm. Trip leaders: Paul Super & Joseph Yarkovich, NPS. Starting at Cataloochee Valley and heading to Purchase Knob, this trip will include searching for some of the 31 species of salamander found in the Smokies and discussions of research in the Smokies and wildlife management practices in the park. Comfortable walking shoes and binoculars recommended. Maximum of 20 participants.
6. **Early Spring Herping at Sandy Bottom Wetlands, Asheville, NC.** Saturday, 8:00 am-12:00 pm. Trip leader: Jim Petranka, UNCA. Sandy Bottom is a small floodplain wetlands complex that supports an exceptionally high diversity of amphibians. We will search the site for herps that include the four-toed salamander, mud salamander, mole salamander, and bog turtle. We will also search aquatic habitats for amphibian eggs and larvae. Maximum of 20 participants.
7. **Balsam Crest, Blue Ridge Parkway, Asheville south to Balsam Gap.** Saturday, 8:30 am-2:30 pm. Trip leader: Dan Pittillo. This driving/hiking tour will take us along the Blue Ridge Parkway as it crosses the crest of the Balsams between Asheville at NC 191 and Balsam Gap. Flatlanders will appreciate the montane climate and elevation impacts on weather (be sure to dress for cold temperatures). We will stop to view plant communities and breathtaking vistas, hiking at Flat Laurel Gap Paleoecological site, Black Balsam Knob grass & heath bald (discussing burn history), and Red Bank Cove, a rich cove forest where early spring ephemerals may be spotted. Maximum of 15 participants.
8. **Don't Fall off the Outcrop! Jackson & Macon counties.** Saturday, 8:00 am-2:30 pm. Trip leader: Gary Wein. We will visit several high-elevation rock outcrops such as Cedar Cliffs, Laurel Knob, Satulah Mountain, and Little Scaly Mountain. Plant communities include acidic and mafic rock outcrops, heath balds, and a 390 year old dwarf montane white oak forest. Come prepared for stunning views and a discussion of the state of conservation in western North Carolina!
9. **Kituhwa & Cowee Historical Cherokee Mound and Town Sites, Bryson City & Franklin, NC.** Saturday, 8:30 am-3:30 pm. Trip Leaders: Jane Eastman, David Cozzo, Tom Belt, WCU. We will visit two sites that are very significant places in Cherokee culture and history: Kituhwa, the Mother Town, and Cowee, a large and important eighteenth-century economic and diplomatic center. Tour leaders will provide perspectives on the cultural, archaeological, and ethnobiological aspects of these two former Cherokee town sites. Van transportation limited to 15 people.
10. **The Ecology of Photography, Balsam Mountain Preserve, Jackson County, NC.** Saturday 8:30 a.m. - 4:30 p.m. Trip leader: Michael Skinner, Executive Director, Balsam Mountain Trust. Join Michael Skinner as he leads you through the art and science of photography for the scientist, naturalist, etc. Understanding the panoply of photo gear and what is practical to carry in the field can often be a daunting way to capture compelling images (trip

leader will have many types of gear for use) The Preserve's 4400 acres is home to an amazing biodiversity and will be your classroom. We will explore, discover, identify and then capture myriad subject matter; from close-ups to landscapes and the gear needed for this type of work. Digital equipment only please. Trip limited to 10 participants. Lunch and drink are included. Carpool from Asheville.

Symposia

Symposium: Early Successional Habitats and the Sustainability of Age Class Diversity of Eastern Upland Hardwood Forest: What, Why, Where, and How? (Thursday session)

Description: This symposium addresses a rising concern among natural resource professionals about decline of the many plant and animal species associated with early-successional habitats within the southeastern upland hardwood forest region, including the Southern Appalachians. This topic is directly related to the meeting theme "Appalachian Spring," as the decline of early successional habitat and associated species will change the Southern Appalachian landscape, including landscape structure, dynamics, and patterns of species diversity.

The symposium will address questions sparked by the decline of early successional habitat, such as: What was the historic distribution, scale, and forest structure of natural disturbances that give rise to early successional habitats? Is natural disturbance enough to maintain these habitats, or should it be augmented through forest management activities? How much early successional habitat is needed at a landscape scale? How big should patches of early successional habitat be? What is the tradeoff between fragmentation and habitat connectivity? What plant and animal species require early successional habitat? How does the creation of young habitat affect species that require mature forest? How does the distribution of early successional habitat affect the distribution and populations of rare plants and animals, or the spread of non-native invasive species? How does the species composition and structure of forests change over time as patches of early successional habitat mature? Can a diversity of age classes be sustained over time? How does carbon storage and sequestration differ among different forest age classes? And, what is the future of forest type and age class diversity in the eastern upland hardwood region?

Organizers: Cathryn H. Greenberg, Bent Creek Experimental Forest, and Beverly Collins, Western Carolina University

Speakers and Titles:

Peter White and Beverly Collins. Natural disturbances and the sustainability of early successional habitat and age class diversity in the eastern upland hardwood forest region.

Stephen R. Shifley and Frank R. Thompson. Patterns in early-successional forest habitat in the eastern US: Regional to landscape effects of management and disturbance.

Nick Haddad and Doug Levey. Multi-species connectivity for upland forests.

Martin Spetich, Stacy Clark, and Craig Harper. The historic role of fire in the eastern upland hardwood forest region.

David L. Loftis, W. Henry McNab, Callie J. Schweitzer, and Tara L. Keyser. Changes in species composition and structure of upland hardwood communities after different silvicultural disturbances across environmental gradients.

David A. Buehler and Kathleen E. Franzreb. Birds and early successional habitat in the southeastern upland hardwood forest region.

C. E. Moorman, K. R. Russell, and C. H. Greenberg. Herpetofaunal response to forest management in eastern upland hardwood forests.

Susan C. Loeb and Joy M. O'Keefe. Bats and gaps: the role of early successional patches in the roosting and foraging ecology of bats.

Gordon S. Warburton, Craig Harper, and Kendrick Weeks. Conservation and management of early successional and other disturbance dependant habitats for wildlife in the Eastern United States; a manager's perspective.

J. Drew Lanham. Fields of Shrub-Scrub Dreams: Opportunities for Wildlife Conservation in Novel Places.

Katherine Elliott, Craig Harper, and Beverly Collins. Herbaceous layer response to type and severity of disturbance over time.

Cathryn H. Greenberg, Douglas J. Levey, J. Drew Lanham, Maria Whitehead, and Craig Harper. Forest food resources for wildlife and early successional habitat in the eastern upland hardwood forest region.

James M. Vose and Chelcy R. Ford. Early Successional Habitat and Water Resources: A Synthesis of the Impacts of Forest Cutting and Other Forest Management Activities on Stream Water Quantity and Quality

Tara L. Keyser. Creation and maintenance of early successional habitat: implications for carbon management.

Dave N. Wear. Forecasting the Future – projecting forest type and age class diversity in the eastern upland hardwood forest region.

Symposium: Conservation in western North Carolina. (Friday afternoon session)

Description: This symposium brings together information on the current status of land and natural resource conservation in the Southern Appalachian region. Representatives from conservation groups and NC state conservation programs will present information on conservation approaches and the status of target organisms. Five presentations will focus on conservation strategies across a range of conservation strategies systems, from state programs to protect water resources, significant habitats and plant populations, to wildlife. Other talks will focus on how development impacts on natural habitats can be mitigated. Finally, two presentations will focus on two of the region's endangered species – the Carolina northern flying squirrel and the green salamander – as case-studies for conservation.

The Southern Appalachian region within western North Carolina not only contains some of the oldest mountains in the world, but also exhibits some of the highest levels of biological diversity in North America. However, the juxtaposition of several major cities in the region and the area's attraction as a location for second homes threatens this biological diversity. This symposium explores the question 'Are there successful strategies for conservation?' that contribute to maintaining the high biodiversity of an Appalachian Spring.

Organizer: Gary Wein, Highlands-Cashiers Land Trust

Speakers and Titles:

Gary Wein. The elements of conservation in western North Carolina.

Phyllis Stiles. A campaign for conservation on a landscape scale in the Southern Blue Ridge ecoregion.

Richard Rogers. Clean water management trust fund: Protecting, restoring and enhancing water quality in North Carolina.

Edward Schwartzman. The North Carolina Natural Heritage Program: Inventory and conservation priorities in Macon County.

Kendrick Weeks. North Carolina Wildlife Action Plan: Wildlife conservation strategies.

Lori Williams. Conservation of the green salamander (*Aneides aeneus*).

Christine Kelly. Conservation of the endangered Carolina northern flying squirrel in North Carolina.

David Tuch. Conservation-based development in western North Carolina.

ASB WORKSHOPS

Herbarium Curators Workshop

Title: SERNEC: Collaborations and funding opportunities

Organizer: Zack Murrell

Submitter's Contact Info: Zack E. Murrell, Department of Biology, Appalachian State University, Boone, NC 28608; 828-262-2674; murrellze@appstate.edu

Session Description: The meeting will be held at the North Carolina Arboretum on Saturday, April 10, 2010, from 8:30 a.m. to 4:30 p.m. Shuttle transportation will be provided from the conference hotel (Crowne Plaza Resort) to the arboretum at 8:00 a.m. We also have travel funds for participants (see SERNEC.org).

SERNEC (SouthEast Regional Network of Expertise and Collections) is a National Science Foundation Research Coordination Network (RCN). We are in our fourth year of five years of funding from NSF. We have used the ASB meeting infrastructure as a vehicle for getting the herbarium curators in the Southeast together annually. We have three goals to accomplish in our workshop in 2010.

- Goal 1 Mobilize curators to seek funds to digitization efforts. We will examine various aspects of the grant writing process and also talk to some scientists who have grant writing track records. We will continue to organize collaborative groups of curators and IT scientists to seek sources of external support.
- Goal 2 Outreach to the community and to K-12 students and teachers. This aspect of the workshop will address methods of outreach via web sites, newsletters, local and regional media. It will also address state and regional methods to integrate our efforts with those of the K-12 learning community. This workshop will build the framework for meetings in 2009 and 2010 that will involve teachers in botanical learning.
- Goal 3 Development of a "virtual campus" of curators and herbaria. The focus of this aspect of the workshop will be on activities to provide training opportunities to field schools, state and federal agencies and botanical gardens to train post-docs, graduate and undergraduate students and researchers in organismal and field based research methods and opportunities. We will also report on our efforts to form a "Distributed IT Support System for the SERNEC Community."

Workshop Justification: This workshop will allow SERNEC curators and associated scientists the opportunity to discuss future plans and develop collaborations. We have developed a relatively mature network of curators and many projects are in various stages of development. We have organized on a

state-by-state level and also along thematic groups. This annual gathering provides an opportunity for in-depth conversations and development of long-term strategies for research, education and funding.

One-sentence Summary: The SERNEC workshop provides an opportunity for experts associated with herbaria to obtain updates in ongoing efforts and make plans for the development of new efforts and initiatives.

Human Diversity Committee Luncheon and Workshop

Organizer: Dr. Jennifer Davis, Chair, Human Diversity Committee

Speaker: Dr. Kelly Ward, Professor of Higher Education, Washington State University, Pullman

Title: Academic Motherhood: Managing Work and Family

Description: Managing work and family for female faculty is a topic that is increasingly on the radar for multiple audiences in colleges and universities. The topic has captured the attention of the faculty members themselves, the faculty who work with them, and the administrators who guide policy and practice. The focus of this session is a discussion of findings from a longitudinal study of female faculty that has been taking place for the past ten years. In the initial phase of the study, faculty were early career and with young children. The follow up study included interviews with the same faculty at mid career. The session will highlight findings from the study and provide opportunity for discussion about the dilemmas, policies, and practices that make the combination of work and family manageable for faculty throughout early and mid career.

Date and Time: Thursday, April 8, 2010, 12:00-1:30 p.m.

Room: TBA.

Commercial Workshops/Special Sessions

National Science Foundation-Grant Writing: Proposal Writing and Review Process

Date: Thursday, April 8, 2010

Time: 8:30am

Room: TBA

Session Title: National Science Foundation-Grant Writing: Proposal Writing and Review Process

Presenter: William Carl Taylor, National Science Foundation

Description: An overview of the NSF Biological Sciences Directorate and some of the programs it supports, the proposal review process, and some suggestions for proposal writing.

Biopac Systems, Inc.

Date: Thursday, April 8, 2010

Time: 10:30am

Room: TBA

Session Title: Budget-Beating Physiology Teaching Lab Solutions

Presenter: Mandy Ramsum

Description: The New handheld MP45 joins Biopac Student Lab family of intuitive, flexible and robust data acquisition systems. The powerful two-channel system works with BIOPAC's extensive curriculum library and broad range of transducers. Connect the USB, launch a BSL Lesson and start recording data. Come try this budget-beating solution! www.biopac.com.

Vernier Software & Technology

Date: Thursday, April 8, 2010

Time: 1:30pm

Room: TBA

Session Title: Biology/AP Biology with Vernier

Presenter: John Melville

Description: Come try the Vernier LabQuest! In this hands-on workshop you will learn how to collect and analyze biology data using this rugged and versatile interface as a stand alone device and Logger Pro computer software. By participating, you will see how fundamental College Biology and AP Biology labs can be quickly preformed and analyzed offering more time for individual or group investigations that further explore these critical biological concepts. Activities from our lab books will be performed with a variety of sensors. www.vernier.com.

Bio-Rad Laboratories

Date: Thursday, April 8, 2010

Time: 3:30pm

Room: TBA

Session Title: From Enzymes to Biofuels: An Experimental Approach

Presenter: Dr Sherri Andrews

Description: β -glucosidase enzymes are part of a group of enzymes collectively known as cellulases that are being actively studied and produced for use in the biofuel industry for production of ethanol to replace fossil fuels. Learn how to use a sugar-digesting enzyme as a model for an introduction to biofuel production. www.explorer.bio-rad.com.

Dr. John Herr, University of South Carolina

Date: Friday, April 9, 2010

Time: 8:30am

Room: TBA

Session Title: Clearing Techniques for the Study of Vascular Plant Tissues in Whole Structures and Thick Sections

Presenter: Dr John Herr

Description: The five exercises presented are designed to acquaint the participants with the underlying principles of these techniques with some of its specific uses and limitations.

Exercises:

1. Principles of Microscopy Important to the 4½ Clearing Technique
2. The Clearing of Whole Structures for Study with Low Magnification, Bright-Field Microscopes
3. The Clearing and Differential Staining of Thick Sections for Study with Bright-Field Optics
4. The Clearing of Ovules for Study with Phase Contrast Optics
5. New Uses for Calcium Chloride as a Clearing and Mounting Medium

Associated Microscope and Swift Optical

Date: Friday, April 9, 2010

Time: 10:30am

Room: TBA

Session Title: It's Easy to Go Digital with Swift Optical Microscopes & Digital Cameras, Combined with Motic Images Plus Software

Presenter: Dave Doty

Description: Make science come alive to your students by turning your classroom into a digital classroom. Let us show you some simple and affordable techniques, using Swift microscopes, digital imaging software and products, that you can use every day! Learn how easy it is to use software and make it work with interactive whiteboards or your existing technology. Participants will leave with sample classroom activities and tips. One participant will receive a free copy of the latest classroom lab manual, "Learning Biology with a Digital Microscope". Software and presentation applications to research will also be addressed. www.associatedmicroscope.com.

Environmental Health Perspectives, NIEHS**Date:** Friday, April 9, 2010**Time:** 1:30pm**Room:** TBA

Session Title: Risk Factor Roulette: Inquiry Based Curricula from the World's Leading Environmental Health Journal

Presenter: Dr. Bono Sen

Description: *Environmental Health Perspectives-NIEHS*, promotes environmental health education by using current, credible environmental health science to teach students' the interconnection between their health and the world around them. www.ephonline.org.

University of Mississippi Medical Center**Date:** Friday, April 9, 2010**Time:** 3:30pm**Room:** TBA

Session Title: Prosections: A Unique Approach to Dissection

Presenter: Michael Schenk

Description: What is a Prosection? Performing prosections are valuable additions/contributions to the learning process. Prosected material can increase the amount of material the student is responsible for without performing additional time-consuming tasks. Prosections are often used to show basic anatomy but are more useful depicting specific organs/systems not covered in laboratory sessions. This no stress hands-on workshop will demonstrate some unique approaches to expose complex structures. Some examples include the fish brain, frog brain, reproductive systems of the fetal pig, squid cerebral ganglion and reptilian anatomy (turtle and snake) Specimens supplied by Carolina Biological Supply Company. www.carolina.com.

Commercial Workshops/Special Sessions

Commercial Workshops/Special Sessions will also be available for all registered attendees! These workshops presented by exhibitors will allow you to learn about the latest tips from the experts. The fee for each workshop will be \$10 each, and you may register to attend one or more workshops during the Annual ASB Meeting. To register, and to read about the workshop descriptions, go to www.asb.appstate.edu and click on Attendee Registration & Information. Space is limited and you must pre-register for them, so don't delay! All workshops will be held at the Crowne Plaza Hotel.

Silent Auction

ASB will again hold a silent auction next to the exhibitors. All of the proceeds will go towards supporting student travel to the annual meeting. Last year's Silent Auction was a huge success. Come look at the items up for bid and help support our presenting students.

Social Events

Wednesday Night Mixer: Immediately following the Plenary Session, there will be a social mixer with LIGHT hors d'oeuvres, a cash bar, and live music. The mixer is a long tradition at ASB meetings and is a great time to renew old acquaintances and make new ones. Be sure to sign up for this FREE event on the registration form.

Thursday Night Social: "APPALACHIAN FLING"

Some say that a meeting is judged by the success of the Thursday Night Social. We hope to maintain a longstanding tradition of music, dancing, and entertainment that will give you a break from the work of the meeting.

The Social will be located in the center of downtown Asheville, and offers a spacious floor plan of 13,000 + sq feet, with three unique sections for dancing or conversation without the loud band. Three levels full of fun! Street, Mezzanine and The Second floor with a beautiful balcony area overlooking the mountains of Asheville.

Having the characteristic French cottage setting of exposed brick walls, barn ceilings, and vintage tile floors. This spectacular location offers a warm and relaxed atmosphere with a touch of uniqueness and elegance that will make your Thursday Night Social an exceptional experience for everyone. Its unique layout will offer a large dance floor and spacious dining areas with access to some of the finest specialty beers and microbrews in the country. Want to have some conversation without the loud noise of the band? This unique location is the place for you! Dance the night away or sit back and relax...its up to you!

The Live Band this Year offers an exciting change from our previous bands. Live on stage is the Firecracker Jazz Band. FJB is ranked as one of the top regional bands. "Explosively Hot" and highly recommended, the FJB jubilant vigor that spills from the stage to the streets. The FIRECRACKER JAZZ BAND revitalizes the energy of the roots of Jazz. In paying homage to the pioneers of early 20th Century Jazz, including that of Dixieland and New Orleans, the Firecracker Jazz Band carries the torch that was once lit by such greats as Jelly Roll Morton, Louis Armstrong & Bix Beiderbeck.

Interactive, high energy and fun for everyone! You will not want to miss this!

Friday night Awards Banquet: The culmination of the annual meeting is the ASB Awards Banquet, where we honor the accomplishments of members and students. Delicious beef, chicken and vegetarian options are available. Following dinner, awards will be presented. Remember that long speeches are no longer a part of the banquet. (A reminder: those competing for ASB awards must register for and be present at the banquet in order to receive the award.)

Activities for Guests

Attendees and family members will find many interesting places to visit in the Asheville area. The Asheville Chamber of Commerce (www.ashevillechamber.org/index.asp) and the Convention and Visitor's Bureau (www.exploreasheville.com/index.aspx) provide a wealth of information for planning your visit. Downtown Asheville offers eclectic shopping at Grove Arcade, numerous galleries, and local institutions like Mast General Store; restaurants and cafes that feature local produce; live music; beer from local breweries, and attractions such as Pack Place Education, Arts and Science Center and Thomas Wolfe Memorial State Historic Site. Nearby historic sites include Biltmore and the Carl Sandburg Home National Historic Site. You might visit Black Mountain Center for the Arts or travel along the Blue Ridge Parkway to the Folk Art Center at Milepost 382. Chimney Rock State Park, Grandfather Mountain, North Carolina Arboretum, and the Cradle of Forestry offer outdoor fun. Families can take a ride on the Great Smoky Mountains Railroad, try whitewater rafting, or go trekking with a llama. Look for the Local Activities table at the meeting or visit the 2010 meeting links (on the ASB website <http://www.asb.appstate.edu/meeting.php> or directly at <http://paws.wcu.edu/gadkison/asb2010/>), for more ideas or to sign up for an organized Asheville adventure like those listed here:

French Broad River Canoe Trip, Asheville, NC. Saturday, 8:00 am-12:00 pm. Outfitted by the Asheville Outdoor Center (<http://www.paddlewithus.com>). Cost: \$35. This self-guided, 3-hour, 7-mile river trip is an excellent beginner trip suitable for families and children. Carving its way through the Biltmore Estate Property, with great views of the house and some of the oldest mountains on earth, this quiet, scenic float trip features small waves and easy current and has all the variety for a fun filled day on the river. The river otter, soft-shell turtle, pileated wood pecker, Carolina wren and great blue heron are all likely to be seen when floating this relaxing trip on the French Broad River.

French Broad Whitewater Rafting, Madison County, NC. Saturday, time TBA. Guided by French Broad Rafting Expeditions (<http://www.frenchbroadrafting.com/>). Cost: \$45. Experience the exciting adventure of whitewater rapids and enjoy the natural beauty of the Pisgah National Forest as an experienced river guide takes you down the French Broad River on a memorable rafting journey. This trip is a 5-mile, 2-3 hour trip containing class I-III rapids. No rafting experience necessary; children must be 8 or older.

Conference Badges

You will receive your meeting badges when you arrive in Asheville. Simply proceed to the Registration Area in the Crowne Plaza to receive your badge. Guests of conference participants should ask for guest conference badges at the registration desk. **YOU MUST WEAR YOUR BADGE TO ALL FUNCTIONS, INCLUDING SOCIAL EVENTS!**

Sponsorships/Industry Partners

A wide selection of special sponsorships will be available to our Industry Partners. Please view the sponsorships on our web site: www.asb.appstate.edu. For additional information you may call or e-mail our Meetings Coordinator, Scott Jewell, office: 336 421-0034, cell 336 213-7373, A2ZConvention@yahoo.com.

Advertising

The ASB is now offering advertising space in one or more issues of our quarterly publication, Southeastern Biology. Advertisers may also purchase space in our final on-site program, The ASB Schedule-At-A-Glance. Please view pricing structure, specifications and deadline scheduling on our web site: www.asb.appstate.edu. For additional information you may call or e-mail our Meetings Coordinator, Scott Jewell, office: 336 421-0034, cell 336 213-7373, A2ZConvention@yahoo.com.

Registration Information

We encourage everyone to register early and save money. ASB offers 3 options for registration: 1) On-line @ www.asb.appstate.edu; 2) US Mail sent to A2Z Convention Services, PO Box 1088 Mebane, NC 27302;3) Fax directly to A2Z Convention Services 336-421-3425. Details of the options follow the registration form. Mail in must be postmarked by April 1, 2010



ASB 2010 Hotel Information

- Please use the ASB approved hotel.
- ASB will receive exclusive benefits for using the ASB sponsored hotel.
- Experience comfortable convenience!
- Park your car at the Crowne Plaza and leave it until the end of the convention.
- All conference events will be held at the Crowne Plaza.
- ASB is renting the entire property during our Annual Meeting!

ASB has secured the following hotel at a discounted rate for exhibitors and attendees. Please remember to ask for the special **ASB discounted rate when making reservations**. The following hotels are providing additional services to accommodate ASB. Please make your reservations as soon as possible. The Crowne Plaza is our Headquarters Hotel and has been secured for Exhibitors and ASB attendees. There is NO daily parking fee at the Crowne Plaza or the Four Points by Sheraton for personal vehicles and vans. Please make your reservations as soon as possible. Please visit their web sites for directions to their property or use your "lady in the box" (GPS). **THE LAST DAY TO RESERVE A ROOM AT THE DISCOUNTED RATE IS MIDNIGHT 3/5/2010.**

About the Headquarters Hotel: Crowne Plaza

Note: All conference events will be held at the Crowne Plaza.

Escape to the beautiful Crowne Plaza Tennis & Golf Resort-Asheville located in the Blue Ridge Mountains and only one mile from downtown Asheville. Enjoy rooms with private balconies and views of the golf course. The resort is just 15 miles away from the Asheville Regional Airport and within minutes away of many attractions such as the **Biltmore**, **Blue Ridge Parkway**, Whitewater Rafting and the **NC Arboretum** just to name a few. The scenic mountain trails in our area offer some of the best mountain biking and hiking in the region. Enjoy our recreational facilities and tee off on our 9-hole golf course (re-opened in June 2009 after extensive renovations). Challenge your friends to a tennis match on our 4 indoor hard or 10 outdoor clay courts, or enjoy swimming in our heated pool (open mid May-mid Oct.).

The **Crowne Plaza Tennis and Golf Resort-Asheville** offers rooms featuring Sleep Advantage Bedding and sleep amenities providing you with a perfect night's sleep. Also offered is complimentary high-speed wireless Internet in all our guest rooms and meeting space.

2010 ASB Attendee & Exhibitor Group Discount Hotels

Rates, Links & Addresses

Note: All conference events will be held at the **Crowne Plaza**.

***To Make a Reservation:** Call the toll free number 800-733-3211 and tell the reservations person that you want the special group rate for ASB or The Association of Southeastern Biologists*

If you wish to reserve a Villa, you must call the local number 828-254-3211 and ask for in-house reservations. Please tell the reservations person that you want the special group rate for ASB or The Association of Southeastern Biologists.

Headquarters Hotel

Crowne Plaza Tennis & Golf Resort

One Resort Drive
Asheville, NC 28806

www.ashevillecp.com
Phone: 800-733-3211

Run of the House

1, 2, 3, or 4 persons-\$112.00

King Executive

1, 2, 3, or 4 persons-\$149.00

Villa Studio—Large enough for one or two people

1 or 2 persons--\$119.00

Villa One Bedroom—Large enough for one or two people but more spacious than the studio villa.

1 or 2 persons--\$149.00

Villa Two—Large enough for 1-4 people, very spacious

1, 2, 3, or 4 persons--\$169.00

2010 ASB Attendee & Exhibitor Group Discount Hotels **Rates, Links & Addresses (Continued)**

Overflow Hotel: Four Points by Sheraton

Location: In the heart of downtown Asheville and only one mile to the Crowne Plaza. Shuttle Service provided throughout the conference.

Note: All conference events will be held at the Crowne Plaza.

Shuttle Service: Shuttle service will be provided to/from the Headquarters Hotel beginning early afternoon on Wednesday 4/7/10 and ending late on Friday 4/9/10. You will park your car in the free parking lot and ride the shuttles during the Annual Meeting. Shuttle Service will depart to/from the Four Points by Sheraton every 30 minutes. A shuttle service schedule will be published in the "Schedule-At-A-Glance" that can be picked up at the Registration Desk.

Best of Both Worlds. Four Points by Sheraton Asheville Downtown offers the convenience of a great downtown location while being nestled among the Blue Ridge Mountains. Step out the door and into a unique world of shops, restaurants, art galleries, and more.

Simple Pleasures. Slip into your Four Points by Sheraton Four Comfort Bed and watch an in-room movie on the 32" LCD flat screen TV. Sample one of the many beers offered with our Best Brews(SM) or catch up on some reading over a hot & fresh cup of Seattle's Best Coffee. We are also proud to be a 100% non-smoking hotel. For animal lovers, we offer pet-friendly rooms for a fee.

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Asheville, NC 28801

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Phone: 828-253-1851

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Note: Our street name has recently changed from Holiday Inn Drive to Resort Drive. We have submitted this change to the online map companies and the GPS software providers. Until they update their records, you will need to use One Holiday Inn Drive to locate our property.

From South (Asheville Regional Airport; Greenville/Spartanburg, SC; Columbia, SC):

- Travel West on I-26
- Follow signs for I-240 to Asheville
- Merge into the left lane and take exit 3A
- This will merge you onto Patton Ave.
- At the 2nd light make a right onto Regent Park Blvd (between Denny's and Pizza Hut)
- The road will bear right and our entrance will be immediately on the left (before entering Sam's Club parking lot)
- Follow our road past our golf course to the main entrance

From West (Knoxville, TN):

- Travel East on I-40
- Follow signs for I-240 East towards Asheville (left exit)
- Merge into the left lane and take exit 3A
- This will merge you onto Patton Ave.
- At the 2nd light make a right onto Regent Park Blvd (between Denny's and Pizza Hut)
- The road will bear right and our entrance will be immediately on the left (before entering Sam's Club parking lot)
- Follow our road past our golf course to the main entrance

From East (Hickory, Winston-Salem, Greensboro, Raleigh, NC):

- Travel West on I-40
- Take exit 53-B onto I-240 West towards downtown Asheville
- As you cross the "French Broad River Bridge" merge into the far right lane, marked as an "Exit Only" for Exit 3-B (labeled Westgate and Resort Dr)
- Merge into the right lane as you pass the Westgate Shopping Center
- Our driveway is IMMEDIATELY as you round the curve to your right

From North (Johnson City, TN):

- Travel South on Hwy 19/23 (also known as I-26 East)
- Merge onto I-240 West
- Stay in the right lane as you merge, marked as an "Exit Only" for Exit 3-B (labeled Westgate and Resort Dr)
- Merge into the right lane as you pass the Westgate Shopping Center
- Our driveway is IMMEDIATELY as you round the curve to your right



Silent Auction

Yes, I would like to contribute to the Silent Auction to help with student travel to the Annual Meeting. (100% of all proceeds to benefit student travel.)

Partial List of Items Donated at the 2009 Annual Meeting.

| | |
|---------------------------------|--------------------|
| Dissection Set | Charts |
| Corporate Gift Certificates | Wine Gift Basket |
| Frog Model | Educational Charts |
| Dinner for Two | Microscope |
| Two Nights Hotel Accommodations | Books |

Description of item(s) to be donated:

Please check appropriate option:

Please contact me at the convention to pick up donation.

I will mail donation to Scott Jewell, ASB Meeting Planner, before March 15, 2010.

| | | |
|-----------|--------|-------|
| Signature | Date | phone |
| Title | e-mail | |

Return form by **March 15, 2010** to: Scott Jewell, ASB Meeting Planner, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.

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The Botanical Gardens on the campus of the University of North Carolina at Asheville, North Carolina.

**LOCAL COMMITTEE ASSIGNMENTS
FOR THE 71st ANNUAL MEETING
WESTERN CAROLINA UNIVERSITY AND
UNIVERSITY OF NORTH CAROLINA ASHEVILLE**

| | | |
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| <i>Local Arrangements Co-Chairs:</i> | Beverly Collins collinsb@email.wcu.edu Jonathan Horton jhorton@unca.edu | (828) 227-3663 (828) 232-5152 |
| <i>Program Committee:</i> | Laura DeWald ldewald@email.wcu.edu Jennifer Rhode jrhode@unca.edu | (828) 227-2478 (828) 251-6232 |
| <i>Field Trips:</i> | Kathy Mathews kmathews@email.wcu.edu Chris Nicolay cnicolay@unca.edu | (828) 227-3659 (828) 232-5149 |
| <i>Social Events:</i> | Sean O'Connell soconnell@email.wcu.edu Jonathan Horton jhorton@unca.edu | (828) 227-2203 (828) 232-5152 |
| <i>Volunteer Coordinators:</i> | Anjana Sharma asharma@email.wcu.edu Jennifer Rhode jrhode@unca.edu | (828) 227-7244 (828) 251-6232 |
| <i>Tri-Beta Coordinators:</i> | Robert Carter rcarter@jsu.edu | (256)782-5144 |
| <i>Audiovisual Coordinator:</i> | Greg Adkison gadkison@email.wcu.edu Tim Forrest tforrest@unca.edu | (828) 227-3655 (828) 232-5150 |
| <i>Silent Auction:</i> | Sean O'Connell soconnell@email.wcu.edu | (828) 227-2203 |
| <i>Meetings Coordinator:</i> | Scott Jewell a2zconvention@yahoo.com A2Z Convention Services | (336) 421-0034 |

The Meetings Coordinator handles Annual Meeting Budget, Commercial Exhibits & Workshops, Special Sessions, Advertising On Line Registration, On Site Registration, Hotel Accommodations, and Transportation.

Affiliate Societies Meeting with ASB

APRIL 7-10, 2010

The following affiliate societies will be in attendance at the 2010 Annual Meeting. We anticipate an excellent diversity of paper and poster presentations. The societies and their contacts are listed below.

**American Society of Ichthyologists
and Herpetologists,
Southeastern Division**

Dr. Greg Fulling
E-mail: gfulling@geo-marine.com
Website: <http://www.asih.org>

**Beta Beta Beta
Southeastern District I**

Dr. Virginia Martin
Queens College of Charlotte
1900 Selwyn Avenue
Charlotte, NC 28274
(704) 337-2261
e-mail: martinv@rex.queens.edu

**Beta Beta Beta
Southeastern District II**

Dr. Christi Magrath
Dept. of Biological & Env. Sci.
Troy University
Troy, AL 36082
(334) 670-3622
e-mail: cmagrath@troy.edu

**Botanical Society of America
Southeastern Section**

Dr. Lytton John Musselman
Mary Payne Hogan Professor of
Botany and Chair
Department of Biological Sciences
110 Mills Godwin Building/45th St
Old Dominion University
Norfolk, VA 23529-0266
(757) 683 3595; Fax: (757) 683 5283
e-mail: lmusselman@odu.edu
<http://web.odu.edu/lmusselman>

**Ecological Society of America
Southeastern Chapter**

Dr. Joel Gramling
Department of Biology
171 Moultrie Street
The Citadel
Charleston, SC 29409
(843) 953-6459; Fax (843) 953-7264
E-mail: joel.gramling@citadel.edu

Society of Herbarium Curators

Dr. John Nelson
Department of Biological Science
University of South Carolina
Columbia, SC 29208
(803) 777-8196
e-mail: nelson@biol.sc.edu

**Society of Wetland Scientists
South Atlantic Chapter**

Dr. Dianna Hogan
U.S. Geological Survey
12201 Sunrise Valley Drive, MSN 521
Reston, VA 20192
(703) 648-7240; Fax: (703) 648-4603
e-mail: dhogan@usgs.gov

**Southern Appalachian Botanical
Society**

Dr. Conley K. McMullen
Department of Biology
James Madison University
Harrisonburg, VA 22807
(540) 568-3805; Fax: (540) 568-3333
e-mail: mcmullck@jmu.edu

Southeastern Society of Parasitologists

Dr. Vince Connors,
Secretary-Treasurer
Dept. of Biology
University of South Carolina Upstate
800 University Way
Spartanburg, SC 29303
(864) 503-5780
email: vconnors@uscupstate.edu

Southeastern Fishes Council

Dr. Henry Bart
Tulane Museum of Natural History
Tulane University
Belle Chasse, LA 70037
Phone: (504) 394-1771
Fax: (504) 394-5045
E-mail: hank@museum.tulane.edu

Southeastern Microscopy Society

Cynthia S. Goldsmith
Secretary, SEMS
E-mail: csg1@cdc.gov
Website: <http://www.southeasternmicroscopy.org>

National Association of Biology Teachers

Lisa Walker
Director of Conventions
lwalker@nabt.org



The McKee Building on the campus of Western Carolina University, Cullowhee, North Carolina. The building houses classrooms and the Speech and Hearing Center.

SPECIAL REMINDERS FROM THE PRINT EDITOR

ASB BANQUET ATTENDANCE

Please keep in mind that recipients of ASB awards must be present at the annual ASB banquet to receive the award. Therefore, all applicants for ASB awards must attend the banquet to insure the presence of the winners.

MEMBERSHIP UPDATE

Please make sure your membership status is up-to-date amply before the deadline for abstract submission and for annual meeting registration. Please be aware that mailing a check or money order for membership renewal to the treasurer and then trying to register online or by mail for the annual meeting on the same day does not work. Moreover, trying to pay for membership renewal online in tandem with registering for the annual meeting online does not work well either.

EXTRA ABSTRACT SUBMISSION

Besides sending abstracts of papers and posters to the Program Committee by January 8, 2010, anyone wishing to be considered for an award must send an abstract to the respective award committee chairperson in order to be considered. An abstract must be sent to the chairperson by January 8, 2010.

INSTRUCTIONS FOR SUBMITTING ORAL PRESENTATIONS AND PREPARING POSTERS

Complete and final Powerpoint presentations should be brought on a USB memory drive and presented at registration. Presenters should bring a backup copy on a USB memory drive to the meeting room. Poster space is 46" x 46". Bring your own pins.

For questions, contact Dr. Greg Adkison, Department of Biology, Western Carolina University, email: gadkison@email.wcu.edu, 828-227-3655 or Dr. Beverly Collins, Department of Biology, Western Carolina University, email: collinsb@email.wcu.edu, 828-227-3663.

ADDENDUM TO**"A MEMORABLE ASB EVENT: 'DARWIN 200' SYMPOSIUM"**
SE Biology, 57: 83-95, 2010.**DARWINIAN SELECTION PRESSURE ON COMMERCIAL FISHES
AND E. O. WILSON'S LETTER TO ASB****Robert Y. George Ph.D.**

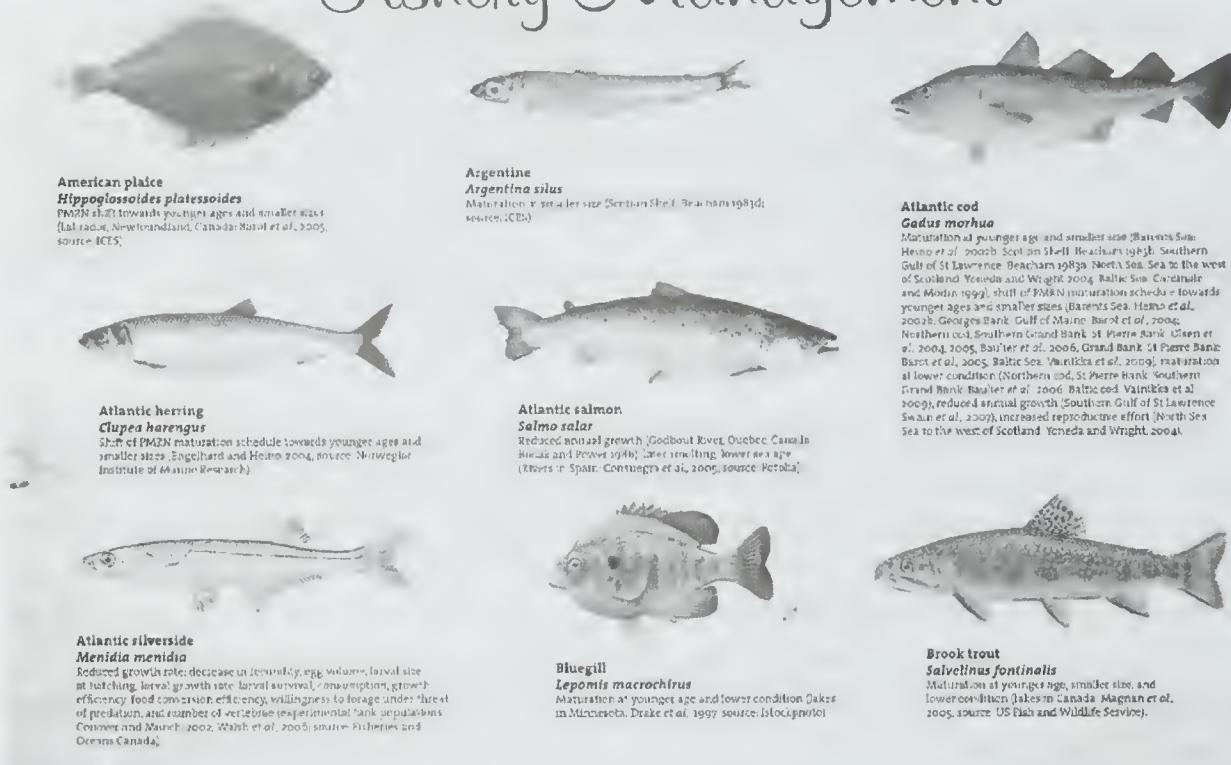
Professor Emeritus and
President and CEO, George Institute for Biodiversity and Sustainability
1320 Vanagrif Ct., Heritage Hill, Wake Forest, North Carolina 27587
www.GIBSconservation.org

The serious threat to biodiversity both in land and marine ecosystems is a matter of concern for conservation biologists and this awareness is obvious with the ongoing discussions on potential consequences of the climate change on life on Earth. This is precisely the reason for the 'ASB DARWIN 200' symposium on April 3, 2009 as explained by George (2009).

The great advocate of climate change mitigation measures, James Hansen (formerly director of the NASA Goddard Institute of Space Studies), cautioned in his recent book entitled "Storms of My Grandchildren", that the Earth is in imminent peril. He emphatically stated that "continued exploitation of all fossil fuels on Earth threatens not only the other millions of species on the planet but also the survival of humanity itself and a timetable shorter than we thought". Qualitatively different storms or hurricanes like *Katrina* will occur when ice-sheet disintegration in Antarctica and Greenland is large enough to damp high-latitude ocean warming. Hansen, who resigned from his government job during the previous administration, just like biologist Rachel Carson (author of *Silent Spring* 1962; Lear, 1997) resigned her job from the Interior Department to make her heart-felt concern about the appalling damages made by the use of DDT. However, her dream came true posthumously when DDT was abandoned. Now endangered species like brown pelicans are no longer endangered. Thanks to Rachel Carson. The question now is: Can the dreams of Jim Hansen come true?

The sad news is that recently ICES (International Council for the Exploration of the Seas: the author of this article is a member of the ICES Working Group) fisheries biologists (Dieckmann et al., 2009) now discovered that many of the commercial fish species are responding by Darwinian selection pressure to apparent over-fishing activities by *Homo sapiens* with smaller final body dimension and maturation at smaller size and younger age. This is evident in fish species such as American plaice *Hippoglossoides platessoides*, Atlantic cod *Gadus morhua*, Atlantic herring *Clupea harengus*, Atlantic salmon *Salmo salar*, Atlantic silverside *Menedia menedia*, Blue gill *Lepomis macrochirus*, and Brook trout *Salvelinus fontinalis* (illustrated below)..

The Dawn of Darwinian Fishery Management



This new finding makes three fundamental conclusions: (1) We are incurring a “Darwinian debt” that will have to be repaid by future fishers and consumers, (2) Fish stocks that become better adapted to fishing usually do so at the expense of becoming less adapted to their “natural” environment, and (3) Evolutionary “damage” usually occurs much faster than it can be repaired.

REFERENCES

Dieckmann, U., M. Heino and A. Rijnsdorp, 2009. The Dawn of Darwinian Fishery Management. *ICES Insight* Issue No. 46: 34–43.

George, R. Y. 2009. ASB 2009 Darwin Bicentennial Symposium: Its History and Purpose. *Southeastern Biology* Vo. 56 No 4: 450–468.

Lear, L. 1997. *Rachael Carson: Life of the author of Silent Spring, Witness for Nature*. Henry Holt Publishers, 634 pp.

“Since Darwin gave us the glimpse of ‘Origin of Species’, this knowledge should have given us a sense of wonder over the magnitude and duration of biotic enterprise. Man is hardly the sole object of this quest. His assumption arose from whistling in the dark.” Aldo Leopold.

Ed Wilson Puts It in a Nutshell

ASB 70th Annual Meeting
'Darwin 200 Symposium'
Birmingham, Alabama
April 3, 2009

Dear ASB Members,

Growing up as a little boy and through my teenage years, in Alabama and the Panhandle of Florida with a sojourn in Washington, D.C., I became increasingly fascinated by the diversity of life. I had a butterfly period, a snake period, a bird period, a cave animal period, and finally and decisively, an ant period. By my college years I was a devoted specialist on ant biology, but my attention and research continued to range across the great variety of Earth's biodiversity, including all that it means to us as a species, how little we still understand it, and how pressing a danger to it is careless human activity.

So here is a very brief summary of the present status of biodiversity as I see it. Scientists have found the biosphere, that razor-thin membrane around Earth (so thin it can scarcely be seen edgewise from an orbiting space craft) to be richer in content than ever before conceived. Yet the diversity of life within it, which took some 3.5 billion years to evolve, is being eroded at an accelerating rate by thoughtless human activity. Large numbers of species and ecosystems are being eradicated before we even know they exist. Unless, with the aid of science, we slow and eventually halt the destruction—and that is our responsibility—humanity will pay a heavy price in wealth, security, and **Spirit**. There is still "**Hope**" as I appealed in the chapter one of my book *CREATION* (2006) as a letter to a Southern Baptist Pastor, we, scientists and pastors, "have a common purpose in this one life-and-death issue"—"To Save Life on Earth".

Yours affectionately,

Edward O. Wilson
Museum of Comparative Zoology (MCZ)
Harvard University

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Southeastern Naturalist

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2009

Number 4

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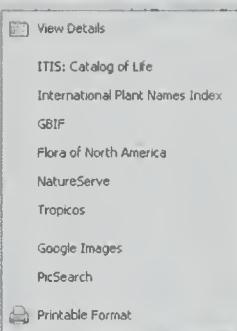
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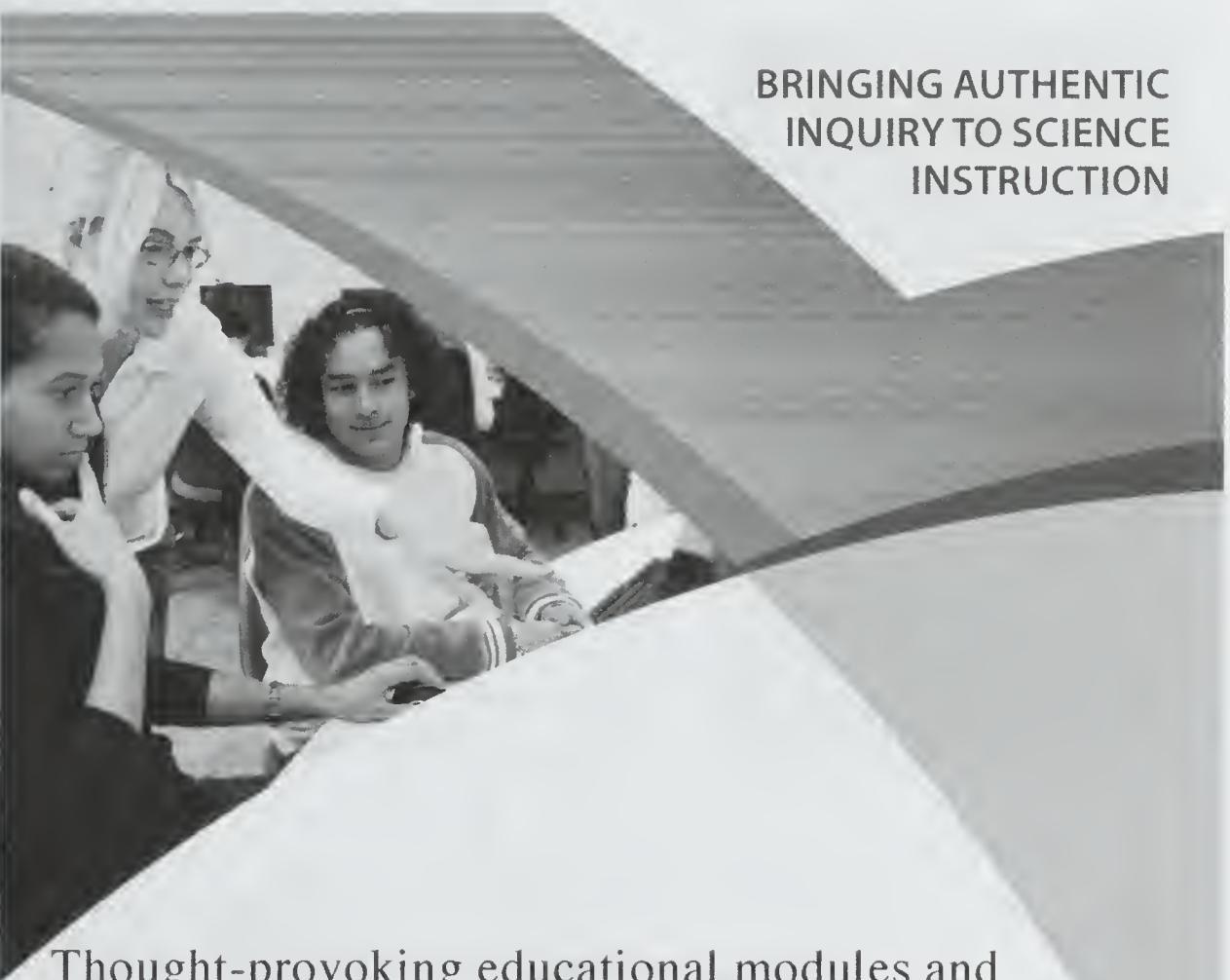
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| Genus: | 17430 | | | | Louisiana | Bienville Parish | unspecified |
| Species: | 17431 | | | | Louisiana | East Baton Rouge Parish | Baton Rouge |
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| | 13268 | | | | Louisiana | Ascension Parish | New River |
| | 13269 | Asteraceae | Ageratina | affissima | | | |



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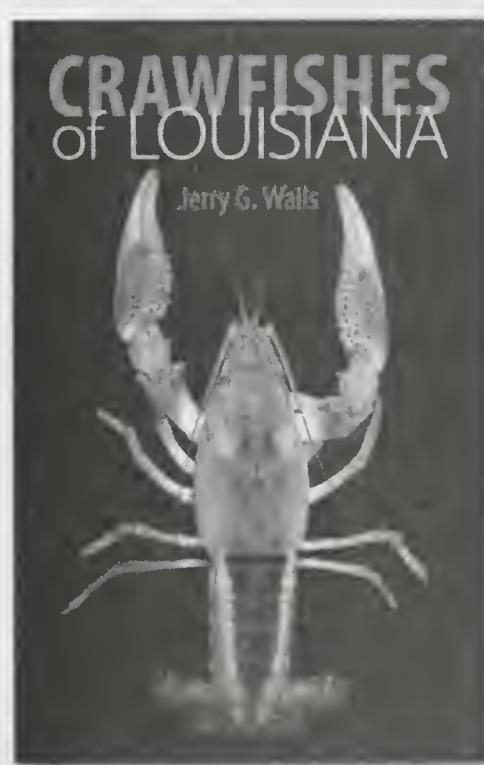
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More information about the ATBI and Discovery Life in America (DLIA) may be obtained from the Executive Director, Todd Witcher, by e-mail todd@dlia.org. The website is <http://www.discoverlifeinamerica.org> or at <http://www.dlia.org>. The mailing address is Discover Life in America, 1314 Cherokee Orchard Road, Gatlinburg, TN 37738-3627. The telephone number is (865) 430-4752. 

SOUTHERN APPALACHIAN FOREST COALITION (SAFC)

ASHEVILLE, NORTH CAROLINA

As stated in their newsletter *Across Our Mountains*, SAFC is an organization dedicated to "working together to protect and restore southern Appalachian forests."

More information about SAFC may be obtained from their web site at <http://www.safc.org>, and by e-mail at safc@safc.org. The mailing address is Southern Appalachian Forest Coalition, 46 Haywood Street, Suite 323, Asheville, North Carolina 28801-2838. The telephone number is (828) 252-9223. 

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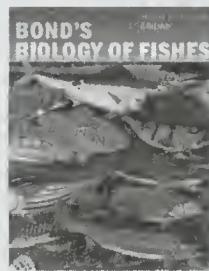


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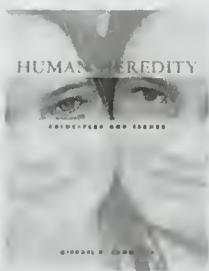
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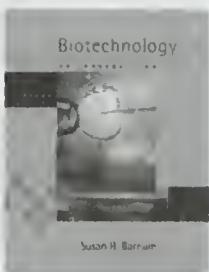
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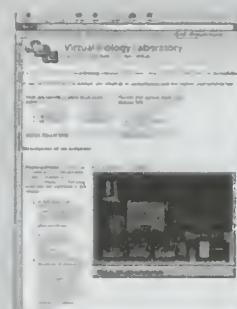
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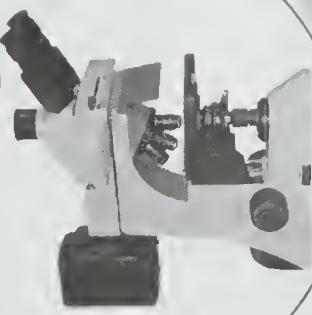
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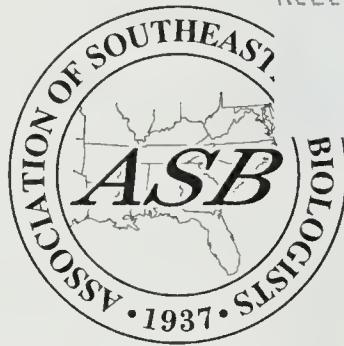
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